

# Rechentabellen

ZUR

sumerisch - akkadischen Mathematik.

# Inhalt.

	Seite
Bezeichnungen	3
I. Reziprokentafel	4
A. Reziproken der Zahlen n von 1 bis 59	5
B. Reziproken der Zahlen N	7
Nullte Ordnung	7
I. Ordnung	7
II. Ordnung	9
III. Ordnung	16
IV. Ordnung	27
V. Ordnung	45
VI. Ordnung	70
II. Quadratzahltafel	105
A. Quadrate der Zahlen n von 1 bis 59	106
B. Quadrate der Zahlen N	107
Nullte Ordnung	107
I. Ordnung	107
II. Ordnung	109
III. Ordnung	116
III. Kubikzahltafel	127
A. Kuben der Zahlen n von 1 bis 59	128
B. Kuben der Zahlen N	129
Nullte Ordnung	129
I. Ordnung	130
II. Ordnung bis 4,0,0	133
IV. Multiplikationstabelle	135
V. " für Zahlen N	137
VI. Zahlentheoretische Funktionen	139
VII. <u>Quadratzahltafel für alle 2-stelligen Zahlen <math>\equiv 0 (5)</math></u>	141
VIII. Potenzen von 2 von 1 bis 60	152
IX. Primzahlen bis $60^2$	
X. Verwandlung von Dezimalen in Sexagesimalbrüche	
XI. Quadratwurzeln	
XII. Conversion Table for hours and "parts"	

Bezeichnungen.

n natürliche Zahl

N Zahl der Form  $2^a \cdot 3^b \cdot 5^c \sim 2^{a-2m} \cdot 3^{b-m} \cdot 5^{c-m}$ ,

$$m = \min \left( \left\lfloor \frac{a}{2} \right\rfloor, b, c \right).$$

sonit  $N^{-1} \sim 2^{2M-a} \cdot 3^{M-b} \cdot 5^{M-c}$ ,

$$M = \max \left( \left\lfloor \frac{a}{2} \right\rfloor + 1, b, c \right).$$

---

I.

Reziprokentafel.

From the Otto Neugebauer papers  
Courtesy of The Shelby White and Leon Levy Archives Center  
Institute for Advanced Study  
Princeton, NJ USA

A. Reziproken der Zahlen n von 1 bis 59.

n	$n^{-1}$
1	1
2	30
3	20
4	15
5	12
6	10
7	<u>8, 34, 17, .....</u>
8	7, 30
9	6, 40
10	6
11	<u>5, 27, 16, 21, 49, ...</u>
12	5
13	<u>4, 36, 55, 23, ...</u>
14	<u>4, 17, 8, 34, ...</u>
15	4
16	3, 45
17	<u>3, 31, 45, 52, 56, 28, 14, 7, ...</u>
18	3, 20
✓ 19	<u>3, 9, 28, 25, 15, 47, 22, 6, 18, 56, 50, 31, 34, 44, 12, 37, 53, 41, .....</u>
20	3
21	<u>2, 51, 25, 42, ...</u>
22	<u>2, 43, 38, 10, 54, 32, ...</u>
✓ 23	<u>2, 36, 31, 18, 15, 39, 7, 49, 33, 54, 46, 57, 23, 28, 41, 44, 20, 52, 10, 26, 5, 13</u>
24	2, 30
25	2, 24
26	<u>2, 18, 27, 41, 32, .....</u>
27	2, 13, 20
28	<u>2, 8, 34, 17, .....</u>
✓ 29	<u>2, 4, 8, 16, 33, 6, 12, 24, 49, 39, 18, 37, 14, 28, 57, 55, 51, 43, 26, 53, 47, 35,</u> <u>10, 20, 41, 22, 45, 31, .....</u>
30	2
31	<u>1, 56, 7, 44, 30, 58, 3, 52, 15, 29, .....</u>
32	1, 52, 30
33	<u>1, 49, 5, 27, 16, 21, .....</u>
34	<u>1, 45, 52, 56, 28, 14, 7, 3, 31, ...</u>
35	1, 42, 51, 25, .....
36	1, 40

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

$n$	$n^{-1}$
37	1, <u>37, 17, 50, 16, 12, 58, 22, 42</u> , 9, 43, 47, ...
38	1, <u>34, 44, 12, 37, 53, 41</u> , 3, 9, 28, 25, 15, 47, 22, 6, 18, 56, 50, 31, ...
39	1, <u>32, 18, 27, 41</u> , ...
40	1, 30
✓ 41	1, <u>27, 48, 17, 33, 39, 30, 43, 54</u> , 8, 46, 49, 45, 21, 57, 4, 23, 24, 52, 40, 58, <u>32, 11, 42, 26, 20, 29, 16</u> , 5, 51, 13, 10, 14, 38, 2, 55, 36, 35, 7, 19, ...
42	1, <u>25, 42, 51</u> , ...
43	1, <u>23, 43, 15, 20, 55, 48, 50, 13, 57, 12, 33, 29, 18</u> , 8, 22, 19, 32, 5, 34, 53, ..
44	1, <u>21, 49</u> , 5, 27, 16, .....
45	1, 20
46	1, <u>18, 15, 39, 7, 49, 33, 54, 46, 57, 23, 28, 41, 44, 20, 52, 10, 26</u> , <u>5, 13</u> , 2, <u>36, 31</u> , .....
✓ 47	1, <u>16, 35, 44, 40, 51, 3, 49, 47, 14, 2, 33, 11, 29, 21, 42, 7, 39, 34, 28, 5</u> , <u>22, 58, 43, 24, 15, 19, 8, 56, 10, 12, 45, 57, 26, 48, 30, 38, 17, 52, 20, 25, 3</u> , <u>54, 53, 37</u> , .....
<del>48</del> 49	1, <u>13, 28, 9, 47, 45, 18, 24, 2, 26, 56, 19, 35, 30, 36, 44, 4, 53, 52, 39, 11</u> , ..
50	1, 12
51	1, <u>10, 35, 17, 38, 49, 24, 42, 21</u> , ...
52	1, <u>9, 13, 50, 46</u> , .....
53	1, <u>7, 55, 28, 18, 6, 47, 32, 49, 48, 40, 45, 16, 58, 52, 4, 31, 41, 53, 12, 27, 1</u> , <u>11, 19, 14, 43</u> , .....
54	1, 6, 40
55	1, <u>5, 27, 16, 21, 49</u> , .....
56	1, <u>4, 17, 8, 34</u> , ...
57	1, <u>3, 9, 28, 25, 15, 47, 22, 6, 18, 56, 50, 31, 34, 44, 12, 37, 53, 41</u> , .....
58	1, <u>2, 4, 8, 16, 33, 6, 12, 24, 49, 39, 18, 37, 14, 28, 57, 55, 51, 43, 26, 53, 4</u> , <u>35, 10, 20, 41, 22, 45, 31</u> , .....
59	1, .....

B. Reziproken der Zahlen N.

Nullte Ordnung.

a	b	c	N	N <sup>-1</sup>	a	b	c	N	N <sup>-1</sup>	γ
0	0	0	1	1	2	0	1	20	3	
1	0	0	2	30	3	1	0	24	2,30	
0	1	0	3	20	0	0	2	25	2,24	
2	0	0	4	15	0	3	0	27	2,13,20	
0	0	1	5	12	1	1	1	30	2	
1	1	0	6	10	5	0	0	32	1,52,30	
3	0	0	8	7,30	2	2	0	36	1,40	
0	2	0	9	6,40	3	0	1	40	1,30	
1	0	1	10	6	0	2	1	45	1,20	
2	1	0	12	5	4	1	0	48	1,15	
0	1	1	15	4	1	0	2	50	1,12	
4	0	0	16	3,45	1	3	0	54	1, 6,40	
1	2	0	18	3,20						

I. Ordnung.

a	b	c	N	N <sup>-1</sup>	a	b	c	N	N <sup>-1</sup>
2	1	1	1	1	0	3	1	2,15	26,40
6	0	0	1, 4	56,15	4	2	0	2,24	25
3	2	0	-1,12	-50	1	1	2	2,30	24
0	1	2	-1,15	-48	5	0	1	2,40	22,30
4	0	1	-1,20	-45	1	4	0	2,42	22,13,20
0	4	0	× 1,21	-44,26,40	2	2	1	3	20
1	2	1	-1,30	-40	6	1	0	3,12	18,45
5	1	0	1,36	37,30	3	0	2	3,20	18
2	0	2	-1,40	-36	3	3	0	3,36	16,40
2	3	0	1,48	33,20	0	2	2	3,45	16
3	1	1	-2	-30	4	1	1	4	15
0	0	3	2, 5	28,48	0	5	0	4, 3	14,48,53,20
7	0	0	2, 8	28, 7,30	1	0	3	4,10	14,24
					8	0	0	4,16	14, 3,45

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>	a	b	c	N	N <sup>-1</sup>
1	3	1	4,30	13,20	0	5	1	20,15	2,57,46,40
5	2	0	4,48	12,30	1	0	4	20,50	2,52,48
2	1	2	5	12	8	0	1	21,20	2,48,45
6	0	1	5,20	11,15	4	4	0	21,36	2,46,40
2	4	0	5,24	11, 6,40	1	3	2	22,30	2,40
3	2	1	6	10	5	2	1	24	2,30
0	1	3	6,15	9,36	1	6	0	24,18	2,28, 8,53,2
7	1	0	6,24	9,22,30	2	1	3	25	2,24
4	0	2	6,40	9	9	1	0	25,36	2,20,37,30
0	4	1	6,45	8,53,20	6	0	2	26,40	2,15
4	3	0	7,12	8,20	2	4	1	27	2,13,20
1	2	2	7,30	8	6	3	0	28,48	2, 5
5	1	1	8	7,30	3	2	2	30	2
1	5	0	8, 6	7,24,26,40	0	1	4	31,15	1,55,12
2	0	3	8,20	7,12	7	1	1	32	1,52,30
9	0	0	8,32	7, 1,52,30	3	5	0	32,24	1,51, 6,40
2	3	1	9	6,40	4	0	3	33,20	1,48
6	2	0	9,36	6,15	0	4	2	33,45	1,46,40
3	1	2	10	6	11	0	0	34, 8	1,45,28, 7,30
0	0	4	10,25	5,45,36	4	3	1	36	1,40
7	0	1	10,40	5,37,30	0	7	0	36,27	1,38,45,55,30
3	4	0	10,48	5,33,20	1	2	3	37,30	1,36
0	3	2	11,15	5,20	8	2	0	38,24	1,33,45
4	2	1	12	5	5	1	2	40	1,30
0	6	0	12,9	4,56,17,46,40	1	5	1	40,30	1,28,53,20
1	1	3	12,30	4,48	2	0	4	41,40	1,26,24
8	1	0	12,48	4,41,15	9	0	1	42,40	1,24,22,30
5	0	2	13,20	4,30	5	4	0	43,12	1,23,20
1	4	1	13,30	4,26,40	2	3	2	45	1,20
5	3	0	14,24	4,10	6	2	1	48	1,15
2	2	2	15	4	2	6	0	48,36	1,14, 4,26,40
6	1	1	16	3,45	3	1	3	50	1,12
2	5	0	16,12	3,42,13,20	10	1	0	51,12	1,10,18,45
3	0	3	16,40	3,36	0	0	5	52, 5	1, 9, 7,12
10	0	0	17, 4	3,30,56,15	7	0	2	53,20	1, 7,30
3	3	1	18	3,20	3	4	1	54	1, 6,40
0	2	3	18,45	3,12	0	3	3	56,15	1, 4
7	2	0	19,12	3, 7,30	7	3	0	57,36	1, 2,30
4	1	2	20	3					

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, N.J. USA



II. Ordnung.

a	b	c	N	N <sup>-1</sup>	9
4	2	2	1	1	
0	6	1	1, 0,45	59,15,33,20	
1	1	4	1, 2,30	57,36	
8	1	1	1, 4	56,15	
4	5	0	1, 4,48	55,33,20	
5	0	3	1, 6,40	54	
1	4	2	1, 7,30	53,20	
12	0	0	1, 8,16	52,44, 3,45	
5	3	1	1,12	50	
1	7	0	1,12,54	49,22,57,46,40	
2	2	3	1,15	48	
9	2	0	1,16,48	46,52,30	
6	1	2	1,20	45	
2	5	1	1,21	44,26,40	
3	0	4	1,23,20	43,12	
10	0	1	1,25,20	42,11,15	
6	4	0	1,26,24	41,40	
3	3	2	1,30	40	
0	2	4	1,33,45	38,24	
7	2	1	1,36	37,30	
3	6	0	1,37,12	37, 2,13,20	
4	1	3	1,40	36	
0	5	2	1,41,15	35,33,20	
11	1	0	1,42,24	35, 9,22,30	
1	0	5	1,44,10	34,33,36	
8	0	2	1,46,40	33,45	
4	4	1	1,48	33,20	
0	8	0	1,49,21	32,55,18,31, 6,40	
1	3	3	1,52,30	32	
8	3	0	1,55,12	31,15	
5	2	2	2	30	
1	6	1	2, 1,30	29,37,46,40	
2	1	4	2, 5	28,48	
9	1	1	2, 8	28, 7,30	
5	5	0	2, 9,36	27,46,40	
6	0	3	2,13,20	27	
2	4	2	2,15	26,40	
13	0	0	2,16,32	26,22, 1,52,30	

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
6	3	1	2,24	25
2	7	0	2,25,48	24,41,28,53,20
3	2	3	2,30	24
10	2	0	2,33,36	23,26,15
0	1	5	2,36,15	23, 2,24
7	1	2	2,40	22,30
3	5	1	2,42	22,13,20
4	0	4	2,46,40	21,36
0	4	3	2,48,45	21,20
11	0	1	2,50,40	21, 5,37,30
7	4	0	2,52,48	20,50
4	3	2	3	20
0	7	1	3, 2,15	19,45,11, 6,40
1	2	4	3, 7,30	19,12
8	2	1	3,12	18,45
4	6	0	3,14,24	18,31, 6,40
5	1	3	3,20	18
1	5	2	3,22,30	17,46,40
12	1	0	3,24,48	17,34,41,15
2	0	5	3,28,20	17,16,48
9	0	2	3,33,20	16,52,30
5	4	1	3,36	16,40
1	8	0	3,38,42	16,27,39,15,33,20
2	3	3	3,45	16
9	3	0	3,50,24	15,37,30
6	2	2	4	15
2	6	1	4, 3	14,48,53,20
3	1	4	4,10	14,24
10	1	1	4,16	14, 3,45
6	5	0	4,19,12	13,53,20
0	0	6	4,20,25	13,49,26,24
7	0	3	4,26,40	13,30
3	4	2	4,30	13,20
14	0	0	4,33, 4	13,11, 0,56,15
0	3	4	4,41,15	12,48
7	3	1	4,48	12,30
3	7	0	4,51,36	12,20,44,26,40
4	2	3	5	12
0	6	2	5, 3,45	11,51, 6,40
11	2	0	5, 7,12	11,43, 7,30

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton NJ USA

a	b	c	N	N <sup>-1</sup>
1	1	5	5,12,30	11,31,12
8	1	2	5,20	11,15
4	5	1	5,24	11, 6,40
0	9	0	5,28, 3	10,58,26,10,22,13,20
5	0	4	5,33,20	10,48
1	4	3	5,37,30	10,40
12	0	1	5,41,20	10,32,48,45
8	4	0	5,45,36	10,25
5	3	2	6	10
1	7	1	6, 4,30	9,52,35,33,20
2	2	4	6,15	9,36
9	2	1	6,24	9,22,30
5	6	0	6,28,48	9,15,33,20
6	1	3	6,40	9
2	5	2	6,45	8,53,20
13	1	0	6,49,36	8,47,20,37,30
3	0	5	6,56,40	8,38,24
10	0	2	7, 6,40	8,26,15
6	4	1	7,12	8,20
2	8	0	7,17,24	8,13,49,37,46,40
3	3	3	7,30	8
10	3	0	7,40,48	7,48,45
0	2	5	7,48,45	7,40,48
7	2	2	8	7,30
3	6	1	8, 6	7,24,26,40
4	1	4	8,20	7,12
0	5	3	8,26,15	7, 6,40
11	1	1	8,32	7, 1,52,30
7	5	0	8,38,24	6,56,40
1	0	6	8,40,50	6,54,43,12
8	0	3	8,53,20	6,45
4	4	2	9	6,40
15	0	0	9, 6, 8	6,35,30,28, 7,30
0	8	1	9, 6,45	6,35, 3,42,13,20
1	3	4	9,22,30	6,24
8	3	1	9,36	6,15
4	7	0	9,43,12	6,10,22,13,20
5	2	3	10	6
1	6	2	10, 7,30	5,55,33,20
12	2	0	10,14,24	5,51,33,45

from the Otto Neugebauer papers

Courtesy of The Shelby White and Leon Levy Archives Center

Institute for Advanced Study

Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
2	1	5	10,25	5,45,36
9	1	2	10,40	5,37,30
5	5	1	10,48	5,33,20
1	9	0	10,56, 6	5,29,13, 5,11, 6,40
6	0	4	11, 6,40	5,24
2	4	3	11,15	5,20
13	0	1	11,22,40	5,16,24,22,30
9	4	0	11,31,12	5,12,30
6	3	2	12	5
2	7	1	12, 9	4,56,17,46,40
3	2	4	12,30	4,48
10	2	1	12,48	4,41,15
6	6	0	12,57,36	4,37,46,40
0	1	6	13, 1,15	4,36,28,48
7	1	3	13,20	4,30
3	5	2	13,30	4,26,40
14	1	0	13,39,12	4,23,40,18,45
4	0	5	13,53,20	4,19,12
0	4	4	14, 3,45	4,16
11	0	2	14,13,20	4,13, 7,30
7	4	1	14,24	4,10
3	8	0	14,34,48	4, 6,54,48,53,20
4	3	3	15	4
0	7	2	15,11,15	3,57, 2,13,20
11	3	0	15,21,36	3,54,22,30
1	2	5	15,37,30	3,50,24
8	2	2	16	3,45
4	6	1	16,12	3,42,13,20
0	10	0	16,24, 9	3,39,28,43,27,24,26,40
5	1	4	16,40	3,36
1	5	3	16,52,30	3,33,20
12	1	1	17, 4	3,30,56,15
8	5	0	17,16,48	3,28,20
2	0	6	17,21,40	3,27,21,36
9	0	3	17,46,40	3,22,30
5	4	2	18	3,20
16	0	0	18,12,16	3,17,45,14, 3,45
1	8	1	18,13,30	3,17,31,51, 6,40
2	3	4	18,45	3,12
9	3	1	19,12	3, 7,30

a	b	c	N	N <sup>-1</sup>
5	7	0	19,26,24	3, 5,11, 6,40
6	2	3	20	3
2	6	2	20,15	2,57,46,40
13	2	0	20,28,48	2,55,46,52,30
3	1	5	20,50	2,52,48
10	1	2	21,20	2,48,45
6	5	1	21,36	2,46,40
0	0	7	21,42, 5	2,45,53,16,48
2	9	0	21,52,12	2,44,36,32,35,33,20
7	0	4	22,13,20	2,42
3	4	3	22,30	2,40
14	0	1	22,45,20	2,38,12,11,15
10	4	0	23, 2,24	2,36,15
0	3	5	23,26,15	2,33,36
7	3	2	24	2,30
3	7	1	24,18	2,28, 8,53,20
4	2	4	25	2,24
0	6	3	25,18,45	2,22,13,20
11	2	1	25,36	2,20,37,30
7	6	0	25,55,12	2,18,53,20
1	1	6	26, 2,30	2,18,14,24
8	1	3	26,40	2,15
4	5	2	27	2,13,20
15	1	0	27,18,24	2,11,50, 9,22,30
0	9	1	27,20,15	2,11,41,14, 4,26,40
5	0	5	27,46,40	2, 9,36
1	4	4	28, 7,30	2, 8
12	0	2	28,26,40	2, 6,33,45
8	4	1	28,48	2, 5, 27, 24, 26, 40
4	8	0	29, 9,36	2, 3,27,24,26,40
5	3	3	30	2
1	7	2	30,22,30	1,58,31, 6,40
12	3	0	30,43,12	1,57,11,15
2	2	5	31,15	1,55,12
9	2	2	32	1,52,30
5	6	1	32,24	1,51, 6,40
1	10	0	32,48,18	1,49,44,21,43,42,13,20
6	1	4	33,20	1,48
2	5	3	33,45	1,46,40
13	1	1	34, 8	1,45,28, 7,30

from the Otto Neugebauer papers

Courtesy of The Shelby White and Leon Levy Archives Center

Institute for Advanced Study

Princeton, NJ USA

a	b	c	$\Pi$	$\Pi^{-1}$
9	5	0	34,33,36	1,44,10
3	0	6	34,43,20	1,43,40,48
10	0	3	35,33,20	1,41,15
6	4	2	36	1,40
17	0	0	36,24,32	1,38,52,37, 1,52,30
2	8	1	36,27	1,38,45,55,33,20
3	3	4	37,30	1,36
10	3	1	38,24	1,33,45
6	7	0	38,52,48	1,32,35,33,20
0	2	6	39, 3,45	1,32, 9,36
7	2	3	40	1,30
3	6	2	40,30	1,28,53,20
14	2	0	40,57,36	1,27,53,26,15
4	1	5	41,40	1,26,24
0	5	4	42,11,15	1,25,20
11	1	2	42,40	1,24,22,30
7	5	1	43,12	1,23,20
1	0	7	43,24,10	1,22,56,38,24
3	9	0	43,44,24	1,22,18,16,17,46,40
8	0	4	44,26,40	1,21
4	4	3	45	1,20
15	0	1	45,30,40	1,19, 6,5,37,30
0	8	2	45,33,45	1,19, 0,44,26,40
11	4	0	46, 4,48	1,18, 7,30
1	3	5	46,52,30	1,16,48
8	3	2	48	1,15
4	7	1	48,36	1,14, 4,26,40
0	11	0	49,12,27	1,13, 9,34,29, 8, 8,53,20
5	2	4	50	1,12
1	6	3	50,37,30	1,11, 6,40
12	2	1	51,12	1,10,18,45
8	6	0	51,50,24	1, 9,26,40
2	1	6	52, 5	1, 9, 7,12
9	1	3	53,20	1, 7,30
5	5	2	54	1, 6,40
16	1	0	54,36,48	1, 5,55, 4,41,15
1	9	1	54,40,30	1, 5,50,37, 2,13,20
6	0	5	55,33,20	1, 4,48

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
2	4	4	56,15	1, 4
13	0	2	56,53,20	1, 3,16,52,30
9	4	1	57,36	1, 2,30
5	8	0	58,19,12	1, 1,43,42,13, 20

---

III. O r d n u n g.

a	b	c	N	N <sup>-1</sup>
6	3	3	1	1
2	7	2	1, 0, 45	59, 15, 33, 20
13	3	0	1, 1, 26, 24	58, 35, 37, 30
3	2	5	1, 2, 30	57, 36
10	2	2	1, 4	56, 15
6	6	1	1, 4, 48	55, 33, 20
0	1	7	1, 5, 6, 15	55, 17, 45, 36
2	10	0	1, 5, 36, 36	54, 52, 10, 51, 51, 6, 40
7	3	4	1, 6, 40	54
3	5	3	1, 7, 30	53, 20
14	1	1	1, 8, 16	52, 44, 3, 45
10	5	0	1, 9, 7, 12	52, 5
4	0	6	1, 9, 26, 40	51, 50, 24
0	4	5	1, 10, 18, 45	51, 12
11	0	3	1, 11, 6, 40	50, 37, 30
7	4	2	1, 12	50
18	0	0	1, 12, 49, 4	49, 26, 18, 30, 56, 15
3	8	1	1, 12, 54	49, 22, 57, 46, 40
4	3	4	1, 15	48
0	7	3	1, 15, 56, 15	47, 24, 26, 40
11	3	1	1, 16, 48	46, 52, 30
7	7	0	1, 17, 45, 36	46, 17, 46, 40
1	2	6	1, 18, 7, 30	46, 4, 48
8	2	3	1, 20	45
4	6	2	1, 21	44, 26, 40
15	2	0	1, 21, 55, 12	43, 56, 43, 7, 30
0	10	1	1, 22, 0, 45	43, 53, 44, 41, 28, 53, 20
5	1	5	1, 23, 20	43, 12
1	5	4	1, 24, 22, 30	42, 40
12	1	2	1, 25, 20	42, 11, 15
8	5	1	1, 26, 24	41, 40
2	0	7	1, 26, 48, 20	41, 28, 19, 12
4	9	0	1, 27, 28, 48	41, 9, 8, 8, 53, 20
9	0	4	1, 28, 53, 20	40, 30
5	4	3	1, 30	40
16	0	1	1, 31, 1, 20	39, 33, 2, 48, 45
1	8	2	1, 31, 7, 30	39, 30, 22, 13, 20

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 A



a	b	c	N	N <sup>-1</sup>
12	4	0	1,32, 9,36	39, 3,45
2	3	5	1,33,45	38,24
9	3	2	1,36	37,30
5	7	1	1,37,12	37, 2,13,20
1	11	0	1,38,24,54	36,34,47,14,34, 4,26,40
6	2	4	1,40	36
2	6	3	1,41,15	35,33,20
13	2	1	1,42,24	35, 9,22,30
9	6	0	1,43,40,48	34,43,20
3	1	6	1,44,10	34,33,36
10	1	3	1,46,40	33,45
6	5	2	1,48	33,20
0	0	8	1,48,30,25	33,10,39,21,36
17	1	0	1,49,13,36	32,57,32,20,37,30
2	9	1	1,49,21	32,55,18,31, 6,40
7	0	5	1,51, 6,40	32,24
3	4	4	1,52,30	32
14	0	2	1,53,46,40	31,38,26,15
10	4	1	1,55,12	31,15
6	8	0	1,56,38,24	30,51,51, 6,40
0	3	6	1,57,11,15	30,43,12
7	3	3	2	30
3	7	2	2, 1,30	29,37,46,40
14	3	0	2, 2,52,48	29,17,48,45
4	2	5	2, 5	28,48
0	6	4	2, 6,33,45	28,26,40
11	2	2	2, 8	28, 7,30
7	6	1	2, 9,36	27,46,40
1	1	7	2,10,12,30	27,38,52,48
3	10	0	2,11,13,12	27,26, 15,25,55,33,20
8	1	4	2,13,20	27
4	5	3	2,15	26,40
15	1	1	2,16,32	26,22, 1,52,30
0	9	2	2,16,41,15	26,20,14,48,53,20
11	5	0	2,18,14,24	26, 2,30
5	0	6	2,18,53,20	25,55,12
1	4	5	2,20,37,30	25,36
12	0	3	2,22,13,20	25,18,45
8	4	2	2,24	25
19	0	0	2,25,38, 8	24,43, 9,15,28, 7,30

from the Otto Neugebauer papers  
 courtesy of The Shelby White and Leon Levy Archives Center  
 for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
4	8	1	2,25,48	24,41,28,53,20
0	12	0	2,27,37,21	24,23,11,29,42,42,57,46,40
5	3	4	2,30	24
1	7	3	2,31,52,30	23,42,13,20
12	3	1	2,33,36	23,26,15
8	7	0	2,35,31,12	23, 8,53,20
2	2	6	2,36,15	23, 2,24
9	2	3	2,40	22,30
5	6	2	2,42	22,13,20
16	2	0	2,43,50,24	21,58,21,33,45
1	10	1	2,44, 1,30	21,56,52,20,44,26,40
6	1	5	2,46,40	21,36
2	5	4	2,48,45	21,20
13	1	2	2,50,40	21, 5,37,30
9	5	1	2,52,48	20,50
3	0	7	2,53,36,40	20,44, 9,36
5	9	0	2,54,57,36	20,34,34, 4,26,40
10	0	4	2,57,46,40	20,15
6	4	3	3	20
17	0	1	3, 2, 2,40	19,46,31,24,22,30
2	8	2	3, 2,15	19,45,11, 6,40
13	4	0	3, 4,19,12	19,31,52,30
3	3	5	3, 7,30	19,12
10	3	2	3,12	18,45
6	7	1	3,14,24	18,31, 6,40
0	2	7	3,15,18,45	18,25,55,12
2	11	0	3,16,49,48	18,17,23,37,17, 2,13,20
7	2	4	3,20	18
3	6	3	3,22,30	17,46,40
14	2	1	3,24,48	17,34,41,15
10	6	0	3,27,21,36	17,21,40
4	1	6	3,28,20	17,16,48
0	5	5	3,30,56,15	17, 4
11	1	3	3,33,20	16,52,30
7	5	2	3,36	16,40
1	0	8	3,37, 0,50	16,35,19,40,48
18	1	0	3,38,27,12	16,28,46,10,18,45
3	9	1	3,38,42	16,27,39,15,33,20
8	0	5	3,42,13,20	16,12
4	4	4	3,45	16

from the Otto Neugebauer papers  
 by White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
15	0	2	3,47,33,20	15,49,13,7,30
0	8	3	3,47,48,45	15,48,8,53,20
11	4	1	3,50,24	15,37,30
7	8	0	3,53,16,48	15,25,55,33,20
1	3	6	3,54,22,30	15,21,36
8	3	3	4	15
4	7	2	4,3	14,48,53,20
15	3	0	4,5,45,36	14,38,54,22,30
0	11	1	4,6,2,15	14,37,54,53,49,37,46,40
5	2	5	4,10	14,24
1	6	4	4,13,7,30	14,13,20
12	2	2	4,16	14,3,45
8	6	1	4,19,12	13,53,20
2	1	7	4,20,25	13,49,26,24
4	10	0	4,22,26,24	13,43,2,42,57,46,40
9	1	4	4,26,40	13,30
5	5	3	4,30	13,20
16	1	1	4,33,4	13,11,0,56,15
1	9	2	4,33,22,30	13,10,7,24,26,40
12	5	0	4,36,28,48	13,1,15
6	0	6	4,37,46,40	12,57,36
2	4	5	4,41,15	12,48
13	0	3	4,44,26,40	12,39,22,30
9	4	2	4,48	12,30
20	0	0	4,51,16,16	12,21,34,37,44,3,45
5	8	1	4,51,36	12,20,44,26,40
1	12	0	4,55,14,42	12,11,35,44,51,21,28,53,20
6	3	4	5	12
2	7	3	5,3,45	11,51,6,40
13	3	1	5,7,12	11,43,7,30
9	7	0	5,11,2,24	11,34,26,40
3	2	6	5,12,30	11,31,12
10	2	3	5,20	11,15
6	6	2	5,24	11,6,40
0	1	8	5,25,31,15	11,3,33,7,12
17	2	0	5,27,40,48	10,59,10,46,52,30
2	10	1	5,28,3	10,58,26,10,22,13,20
7	1	5	5,33,20	10,48
3	5	4	5,37,30	10,40
14	1	2	5,41,20	10,32,48,45

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
10	5	1	5,45,36	10,25
4	0	7	5,47,13,20	10,22,4,48
6	9	0	5,49,55,12	10,17,17,2,13,20
0	4	6	5,51,33,45	10,14,24
11	0	4	5,55,33,20	10,7,30
7	4	3	6	10
18	0	1	6,4,5,20	9,53,15,42,11,15
3	8	2	6,4,30	9,52,35,33,20
14	4	0	6,8,38,24	9,45,56,15
4	3	5	6,15	9,36
0	7	4	6,19,41,15	9,28,53,20
11	3	2	6,24	9,22,30
7	7	1	6,28,48	9,15,33,20
1	2	7	6,30,37,30	9,12,57,36
3	11	0	6,33,39,36	9,8,41,48,38,31,6,40
8	2	4	6,40	9
4	6	3	6,45	8,53,20
15	2	1	6,49,36	8,47,20,37,30
0	10	2	6,50,3,45	8,46,44,56,17,46,40
11	6	0	6,54,43,12	8,40,50
5	1	6	6,56,40	8,38,24
1	5	5	7,1,52,30	8,32
12	1	3	7,6,40	8,26,15
8	5	2	7,12	8,20
2	0	8	7,14,1,40	8,17,39,50,24
19	1	0	7,16,54,24	8,14,23,5,9,22,30
4	9	1	7,17,24	8,13,49,37,46,40
0	13	0	7,22,52,3	8,7,43,49,54,14,19,15,33,20
9	0	5	7,24,26,40	8,6
5	4	4	7,30	8
16	0	2	7,35,6,40	7,54,36,33,45
1	8	3	7,35,37,30	7,54,4,26,40
12	4	1	7,40,48	7,48,45
8	8	0	7,46,33,36	7,42,57,46,40
2	3	6	7,48,45	7,40,48
9	3	3	8	7,30
5	7	2	8,6	7,24,26,40
16	3	0	8,11,31,12	7,19,27,11,15
1	11	1	8,12,4,30	7,18,57,26,54,48,53,20
6	2	5	8,20	7,12

a	b	c	N	N <sup>-1</sup>
2	6	4	8,26,15	7, 6,40
13	2	2	8,32	7, 1,52,30
9	6	1	8,38,24	6,56,40
3	1	7	8,40,50	6,54,43,12
5	10	0	8,44,52,48	6,51,31,21,28,53,20
10	1	4	8,53,20	6,45
6	5	3	9	6,40
0	0	9	9, 2,32, 5	6,38, 7,52,19,12
17	1	1	9, 6, 8	6,35,30,28, 7,30
2	9	2	9, 6,45	6,35, 3,42,13,20
13	5	0	9,12,57,36	6,30,37,30
7	0	6	9,15,33,20	6,28,48
3	4	5	9,22,30	6,24
14	0	3	9,28,53,20	6,19,41,15
10	4	2	9,36	6,15
21	0	0	9,42,32,32	6,10,47,18,52, 1,52,30
6	8	1	9,43,12	6,10,22,13,20
0	3	7	9,45,56,15	6, 8,38,24
2	12	0	9,50,29,24	6, 5,47,52,25,40,44,26,40
7	3	4	10	6
3	7	3	10, 7,30	5,55,33,20
14	3	1	10,14,24	5,51,33,45
10	7	0	10,22, 4,48	5,47,13,20
4	2	6	10,25	5,45,36
0	6	5	10,32,48,45	5,41,20
11	2	3	10,40	5,37,30
7	6	2	10,48	5,33,20
1	1	8	10,51, 2,30	5,31,46,33,36
18	2	0	10,55,21,36	5,29,35,23,26,15
3	10	1	10,56, 6	5,29,13, 5,11, 6,40
8	1	5	11, 6,40	5,24
4	5	4	11,15	5,20
15	1	2	11,22,40	5,16,24,22,30
0	9	3	11,23,26,15	5,16, 2,57,46,40
11	5	1	11,31,12	5,12,30
5	0	7	11,34,26,40	5,11, 2,24
7	9	0	11,39,50,24	5, 8,38,31, 6,40
1	4	6	11,43, 7,30	5, 7,12
12	0	4	11,51, 6,40	5, 3,45
8	4	3	12	5

a	b	c	N	N-1
19	0	1	12, 8, 10, 40	4, 56, 37, 51, 5, 37, 30
4	8	2	12, 9	4, 56, 17, 46, 40
15	4	0	12, 17, 16, 48	4, 52, 58, 7, 30
0	12	1	12, 18, 6, 45	4, 52, 38, 17, 56, 32, 35, 33, 20
5	3	5	12, 30	4, 48
1	7	4	12, 39, 22, 30	4, 44, 26, 40
12	3	2	12, 48	4, 41, 15
8	7	1	12, 57, 36	4, 37, 46, 40
2	2	7	13, 1, 15	4, 36, 28, 48
4	11	0	13, 7, 19, 12	4, 34, 20, 54, 19, 15, 33, 20
9	2	4	13, 20	4, 30
5	6	3	13, 30	4, 26, 40
16	2	1	13, 39, 12	4, 23, 40, 18, 45
1	10	2	13, 40, 7, 30	4, 23, 22, 28, 8, 53, 20
12	6	0	13, 49, 26, 24	4, 20, 25
6	1	6	13, 53, 20	4, 19, 12
2	5	5	14, 3, 45	4, 16
13	1	3	14, 13, 20	4, 13, 7, 30
9	5	2	14, 24	4, 10
3	0	8	14, 28, 3, 20	4, 8, 49, 55, 12
20	1	0	14, 33, 48, 48	4, 7, 11, 32, 34, 41, 15
5	9	1	14, 34, 48	4, 6, 54, 48, 53, 20
1	13	0	14, 45, 44, 6	4, 3, 51, 54, 57, 7, 9, 37, 46, 40
10	0	5	14, 48, 53, 20	4, 3
6	4	4	15	4
17	0	2	15, 10, 13, 20	3, 57, 18, 16, 52, 30
2	8	3	15, 11, 15	3, 57, 2, 13, 20
13	4	1	15, 21, 36	3, 54, 22, 30
9	8	0	15, 33, 7, 12	3, 51, 28, 53, 20
3	3	6	15, 37, 30	3, 50, 24
10	3	3	16	3, 45
6	7	2	16, 12	3, 42, 13, 20
0	2	8	16, 16, 33, 45	3, 41, 11, 2, 24
17	3	0	16, 23, 2, 24	3, 39, 43, 35, 37, 30
2	11	1	16, 24, 9	3, 39, 28, 43, 27, 24, 26, 40
7	2	5	16, 40	3, 36
3	6	4	16, 52, 30	3, 33, 20
14	2	2	17, 4	3, 30, 56, 15
10	6	1	17, 16, 48	3, 28, 20
4	1	7	17, 21, 40	3, 27, 21, 36

the Otto Neugebauer papers  
 of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
6	10	0	17,29,45,36	3,25,45,40,44,26,40
0	5	6	17,34,41,15	3,24,48
11	1	4	17,46,40	3,22,30
7	5	3	18	3,20
1	0	9	18, 5, 4,10	3,19, 3,56, 9,36
18	1	1	18,12,16	3,17,45,14, 3,45
3	9	2	18,13,30	3,17,31,51, 6,40
14	5	0	18,25,55,12	3,15,18,45
8	0	6	18,31, 6,40	3,14,24
4	4	5	18,45	3,12
15	0	3	18,57,46,40	3, 9,50,37,30
0	8	4	18,59, 3,45	3, 9,37,46,40
11	4	2	19,12	3, 7,30
22	0	0	19,25, 5, 4	3, 5,23,39,26, 0,56,15
7	8	1	19,26,24	3, 5,11, 6,40
1	3	7	19,31,52,30	3, 4,19,12
3	12	0	19,40,58,48	3, 2,53,56,12,50,22,13,20
8	3	4	20	3
4	7	3	20,15	2,57,46,40
15	3	1	20,28,48	2,55,46,52,30
0	11	2	20,30,11,15	2,55,34,58,45,55,33,20
11	7	0	20,44, 9,36	2,53,36,40
5	2	6	20,50	2,52,48
1	6	5	21, 5,37,30	2,50,40
12	2	3	21,20	2,48,45
8	6	2	21,36	2,46,40
2	1	8	21,42, 5	2,45,53,16,48
19	2	0	21,50,43,12	2,44,47,41,43, 7,30
4	10	1	21,52,12	2,44,36,32,35,33,20
0	14	0	22, 8,36, 9	2,42,34,36,38, 4,46,25,11, 6,40
9	1	5	22,13,20	2,42
5	5	4	22,30	2,40
16	1	2	22,45,20	2,38,12,11,15
1	9	3	22,46,52,30	2,38, 1,28,53,20
12	5	1	23, 2,24	2,36,15
6	0	7	23, 8,53,20	2,35,31,12
8	9	0	23,19,40,48	2,34,19,15,33,20
2	4	6	23,26,15	2,33,36
13	0	4	23,42,13,20	2,31,52,30
9	4	3	24	2,30

From the Otto Neugebauer papers

Property of The Shelby White and Leon Levy Archives Center

Institute for Advanced Study

Princeton, NJ USA

a b c

N

N-1

24

20	0	1	24,16,21,20	2,28,18,55,32,48,45
5	8	2	24,18	2,28, 8,53,20
16	4	0	24,34,33,36	2,26,29, 3,45
1	12	1	24,36,13,30	2,26,19, 8,58,16,17,46,40
6	3	5	25	2,24
2	7	4	25,18,45	2,22,13,20
13	3	2	25,36	2,20,37,30
9	7	1	25,55,12	2,18,53,20
3	2	7	26, 2,30	2,18,14,24
5	11	0	26,14,38,24	2,17,10,27, 9,37,46,40
10	2	4	26,40	2,15
6	6	3	27	2,13,20
0	1	9	27, 7,36,15	2,12,42,37,26,24
17	2	1	27,18,24	2,11,50, 9,22,30
2	10	2	27,20,15	2,11,41,14, 4,26,40
13	6	0	27,38,52,48	2,10,12,30
7	1	6	27,46,40	2, 9,36
3	5	5	28, 7,30	2, 8
14	1	3	28,26,40	2, 6,33,45
10	5	2	28,48	2, 5
4	0	8	28,56, 6,40	2, 4,24,57,36
21	1	0	29, 7,37,36	2, 3,35,46,17,20,37,30
6	9	1	29, 9,36	2, 3,27,24,26,40
0	4	7	29,17,48,45	2, 2,52,48
2	13	0	29,31,28,12	2, 1,55,57,28,33,34,48,53,20
11	0	5	29,37,46,40	2, 1,30
7	4	4	30	2
18	0	2	30,20,26,40	1,58,39, 8,26,15
3	8	3	30,22,30	1,58,31, 6,40
14	4	1	30,43,12	1,57,11,15
10	8	0	31, 6,14,24	1,55,44,26,40
4	3	6	31,15	1,55,12
0	7	5	31,38,26,15	1,53,46,40
11	3	3	32	1,52,30
7	7	2	32,24	1,51, 6,40
1	2	8	32,33, 7,30	1,50,35,31,12
18	3	0	32,46, 4,48	1,49,51,47,48,45
3	11	1	32,48,18	1,49,44,21,43,42,13,20
8	2	5	33,20	1,48
4	6	4	33,45	1,46,40



a	b	c	N	N <sup>-1</sup>
5	2	2	34, 8	1, 45, 28, 7, 30
0	10	3	34, 10, 18, 45	1, 45, 20, 59, 15, 33, 20
1	6	1	34, 33, 36	1, 44, 10
5	1	7	34, 43, 20	1, 43, 40, 48
7	10	0	34, 59, 31, 12	1, 42, 52, 50, 22, 13, 20
1	5	6	35, 9, 22, 30	1, 42, 24
2	1	4	35, 33, 20	1, 41, 15
8	5	3	36	1, 40
2	0	9	36, 10, 8, 20	1, 39, 31, 58, 4, 48
9	1	1	36, 24, 32	1, 38, 52, 37, 1, 52, 30
4	9	2	36, 27	1, 38, 45, 55, 33, 20
5	5	0	36, 51, 50, 24	1, 37, 39, 22, 30
0	13	1	36, 54, 20, 15	1, 37, 32, 45, 58, 50, 51, 51, 6, 40
9	0	6	37, 2, 13, 20	1, 37, 12
5	4	5	37, 30	1, 36
16	0	3	37, 55, 33, 20	1, 34, 55, 18, 45
1	8	4	37, 58, 7, 30	1, 34, 48, 53, 20
12	4	2	38, 24	1, 33, 45
23	0	0	38, 50, 10, 8	1, 32, 41, 49, 43, 0, 28, 7, 30
8	8	1	38, 52, 48	1, 32, 35, 33, 20
2	3	7	39, 3, 45	1, 32, 9, 36
4	12	0	39, 21, 57, 36	1, 31, 26, 58, 6, 25, 11, 6, 40
9	3	4	40	1, 30
5	7	3	40, 30	1, 28, 53, 20
16	3	1	40, 57, 36	1, 27, 53, 26, 15
1	11	2	41, 0, 22, 30	1, 27, 47, 29, 22, 57, 46, 40
12	7	0	41, 28, 19, 12	1, 26, 48, 20
6	2	6	41, 40	1, 26, 24
2	6	5	42, 11, 15	1, 25, 20
13	2	3	42, 40	1, 24, 22, 30
9	6	2	43, 12	1, 23, 20
3	1	8	43, 24, 10	1, 22, 56, 38, 24
20	2	0	43, 41, 26, 24	1, 22, 23, 50, 51, 33, 45
5	10	1	43, 44, 24	1, 22, 18, 16, 17, 46, 40
1	14	0	44, 17, 12, 18	1, 21, 17, 18, 19, 2, 23, 12, 35, 33, 20
10	1	5	44, 26, 40	1, 21
6	5	4	45	1, 20
0	0	10	45, 12, 40, 25	1, 19, 37, 34, 27, 50, 24
17	1	2	45, 30, 40	1, 19, 6, 5, 37, 30
2	9	3	45, 33, 45	1, 19, 0, 44, 26, 40

From the Otto Neugebauer papers

Shelby White and Leon Levy Archives Center

Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
13	5	1	46, 4, 48	1, 18, 7, 30
7	0	7	46, 17, 46, 40	1, 17, 45, 36
9	9	0	46, 39, 21, 36	1, 17, 9, 37, 46, 40
3	4	6	46, 52, 30	1, 16, 48
14	0	4	47, 24, 26, 40	1, 15, 56, 15
10	4	3	48	1, 15
21	0	1	48, 32, 42, 40	1, 14, 9, 27, 46, 24, 22, 30
6	8	2	48, 36	1, 14, 4, 26, 40
0	3	8	48, 49, 41, 15	1, 13, 43, 40, 48
17	4	0	49, 9, 7, 12	1, 13, 14, 31, 52, 30
2	12	1	49, 12, 27	1, 13, 9, 34, 29, 8, 8, 53, 20
7	3	5	50	1, 12
3	7	4	50, 37, 30	1, 11, 6, 40
14	3	2	51, 12	1, 10, 48, 45
10	7	1	51, 50, 24	1, 9, 26, 40
4	2	7	52, 5	1, 9, 7, 12
6	11	0	52, 29, 16, 48	1, 8, 35, 13, 34, 48, 53, 20
0	6	6	52, 44, 3, 45	1, 8, 16
11	2	4	53, 20	1, 7, 30
7	6	3	54	1, 6, 40
1	1	9	54, 15, 12, 30	1, 6, 21, 18, 43, 12
18	2	1	54, 36, 48	1, 5, 55, 4, 41, 15
3	10	2	54, 40, 30	1, 5, 50, 37, 2, 13, 20
14	6	0	55, 17, 45, 36	1, 5, 6, 15
8	1	6	55, 33, 20	1, 4, 48
4	5	5	56, 15	1, 4
15	1	3	56, 53, 20	1, 3, 16, 52, 30
0	9	4	56, 57, 11, 15	1, 3, 12, 35, 33, 20
11	5	2	57, 36	1, 2, 30
5	0	8	57, 52, 13, 20	1, 2, 12, 28, 48
22	1	0	58, 15, 15, 12	1, 1, 47, 53, 8, 40, 18, 45
7	9	1	58, 19, 12	1, 1, 43, 42, 13, 20
1	4	7	58, 35, 37, 30	1, 1, 26, 24
3	13	0	59, 2, 56, 24	1, 0, 57, 58, 44, 16, 47, 24, 26, 40
12	0	5	59, 15, 33, 20	1, 0, 45

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

IV. Ordnung.

24

a	b	c	N	N <sup>-1</sup>
8	4	4	1	1
19	0	2	1, 0, 40, 53, 20	59, 19, 34, 13, 7, 30
4	8	3	1, 0, 45	59, 15, 33, 20
15	4	1	1, 1, 26, 24	58, 35, 37, 30
0	12	2	1, 1, 30, 33, 45	58, 31, 39, 35, 18, 31, 6, 40
11	8	0	1, 2, 12, 28, 48	57, 52, 13, 20
5	3	6	1, 2, 30	57, 36
1	7	5	1, 3, 16, 52, 30	56, 53, 20
12	3	3	1, 4	56, 15
8	7	2	1, 4, 48	55, 33, 20
2	2	8	1, 5, 6, 15	55, 17, 45, 36
19	3	0	1, 5, 32, 9, 36	54, 55, 53, 54, 22, 30
4	11	1	1, 5, 36, 36	54, 52, 10, 51, 51, 6, 40
0	15	0	1, 6, 25, 48, 27	54, 11, 32, 12, 41, 35, 28, 23, 42, 13, 20
9	2	5	1, 6, 40	54
5	6	4	1, 7, 30	53, 20
16	2	2	1, 8, 16	52, 44, 3, 45
1	10	3	1, 8, 20, 37, 30	52, 40, 29, 37, 46, 40
12	6	1	1, 9, 7, 12	52, 5
6	1	7	1, 9, 26, 40	51, 50, 24
8	10	0	1, 9, 59, 2, 24	51, 26, 25, 11, 6, 40
2	5	6	1, 10, 18, 45	51, 12
13	1	4	1, 11, 6, 40	50, 37, 30
9	5	3	1, 12	50
3	0	9	1, 12, 20, 16, 40	49, 45, 59, 2, 24
20	1	1	1, 12, 49, 4	49, 26, 18, 30, 56, 15
5	9	2	1, 12, 54	49, 22, 57, 46, 40
16	5	0	1, 13, 43, 40, 48	48, 49, 41, 15
1	13	1	1, 13, 48, 40, 30	48, 46, 22, 59, 25, 25, 55, 33, 20
10	0	6	1, 14, 4, 26, 40	48, 36
6	4	5	1, 15	48
17	0	3	1, 15, 51, 6, 40	47, 27, 39, 22, 30
2	8	4	1, 15, 56, 15	47, 24, 26, 40
13	4	2	1, 16, 48	46, 52, 30
24	0	0	1, 17, 40, 20, 16	46, 20, 54, 51, 30, 14, 3, 45
9	8	1	1, 17, 45, 36	46, 17, 46, 40
3	3	7	1, 18, 7, 30	46, 4, 48

a	b	c	N	N <sup>m-1</sup>
5	12	0	1,18,43,55,12	45,43,29, 3,12,35,33,20
10	3	4	1,20	45
6	7	3	1,21	44,26,40
0	2	9	1,21,22,48,45	44,14,12,28,48
17	3	1	1,21,55,12	43,56,43, 7,30
2	11	2	1,22, 0,45	43,53,44,41,28,53,20
13	7	0	1,22,56,38,24	43,24,10
7	2	6	1,23,20	43,12
3	6	5	1,24,22,30	42,40
14	2	3	1,25,20	42,11,15
10	6	2	1,26,24	41,40
4	1	8	1,26,48,20	41,28,19,12
21	2	0	1,27,22,52,48	41,11,55,25,46,52,30
6	10	1	1,27,28,48	41, 9, 8, 8,53,20
0	5	7	1,27,53,26,15	40,57,36
2	14	0	1,28,34,24,36	40,38,39, 9,31,11,36,17,46,40
11	1	5	1,28,53,20	40,30
7	5	4	1,30	40
1	0	10	1,30,25,20,50	39,48,47,13,55,12
18	1	2	1,31, 1,20	39,33, 2,48,45
3	9	3	1,31, 7,30	39,30,22,13,20
14	5	1	1,32, 9,36	39, 3,45
8	0	7	1,32,35,33,20	38,52,48
10	9	0	1,33,18,43,12	38,34,48,53,20
4	4	6	1,33,45	38,24
15	0	4	1,34,48,53,20	37,58, 7,30
0	8	5	1,34,55,18,45	37,55,33,20
11	4	3	1,36	37,30
22	0	1	1,37, 5,25,20	37, 4,43,53,12,11,15
7	8	2	1,37,12	37, 2,13,20
1	3	8	1,37,39,22,30	36,51,50,24
18	4	0	1,38,18,14,24	36,37,15,56,15
3	12	1	1,38,24,54	36,34,47,14,34, 4,26,40
8	3	5	1,40	36
4	7	4	1,41,15	35,33,20
15	3	2	1,42,24	35, 9,22,30
0	11	3	1,42,30,56,15	35, 6,59,45,11, 6,40
11	7	1	1,43,40,48	34,43,20
5	2	7	1,44,10	34,33,36
7	11	0	1,44,58,33,36	34,17,36,47,24,26,40

a	b	c	N	N <sup>-1</sup>
1	6	6	1,45,28, 7,30	34, 8
12	2	4	1,46,40	33,45
8	6	3	1,48	33,20
2	1	9	1,48,30,25	33,10,39,21,36
19	2	1	1,49,13,36	32,57,32,20,37,30
4	10	2	1,49,21	32,55,18,31, 6,40
15	6	0	1,50,35,31,12	32,33, 7,30
0	14	1	1,50,43, 0,45	32,30,55,19,36,57,17, 2,13,20
9	1	6	1,51, 6,40	32,24
5	5	5	1,52,30	32
16	1	3	1,53,46,40	31,38,26,15
1	9	4	1,53,54,22,30	31,36,17,46,40
12	5	2	1,55,12	31,15
6	0	8	1,55,44,26,40	31, 6,14,24
23	1	0	1,56,30,30,24	30,53,56,34,20, 9,22,30
8	9	1	1,56,38,24	30,51,51, 6,40
2	4	7	1,57,11,15	30,43,12
4	13	0	1,58, 5,52,48	30,28,59,22, 8,23,42,13,20
13	0	5	1,58,31, 6,40	30,22,30
9	4	4	2	30
20	0	2	2, 1,21,46,40	29,39,47, 6,33,45
5	8	3	2, 1,30	29,37,46,40
16	4	1	2, 2,52,48	29,17,48,45
1	12	2	2, 3, 6, 7,30	29,15,49,47,39,15,33,20
12	8	0	2, 4,24,57,36	28,56, 6,40
6	3	6	2, 5	28,48
2	7	5	2, 6,33,45	28,26,40
13	3	3	2, 8	28, 7,30
9	7	2	2, 9,36	27,46,40
3	2	8	2,10,12,30	27,38,52,48
20	3	0	2,11, 4,19,12	27,27,56,57,11,15
5	11	1	2,11,13,12	27,26, 5,25,55,33,20
1	15	0	2,12,51,36,54	27, 5,46, 6,20,47,44,11,51, 6,40
10	2	5	2,13,20	27
6	6	4	2,15	26,40
0	1	10	2,15,38, 1,15	26,32,31,29,16,48
17	2	2	2,16,32	26,22, 1,52,30
2	10	3	2,16,41,15	26,20,14,48,53,20
13	6	1	2,18,14,24	26, 2,30
7	1	7	2,18,53,20	25,55,12

From the Otto Neugebauer papers  
 Courtesy of the Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	$\mathbb{N}$	$\mathbb{N}^{-1}$
9	10	0	2,19,58, 4,48	25,43,12,35,33,20
3	5	6	2,20,37,30	25,36
14	1	4	2,22,13,20	25,18,45
10	5	3	2,24	25
4	0	9	2,24,40,33,20	24,52,59,31,12
21	1	1	2,25,38, 8	24,43, 9,15,28, 7,30
6	9	2	2,25,48	24,41,28,53,20
0	4	8	2,26,29, 3,45	24,34,33,36
17	5	0	2,27,27,21,36	24,24,50,37,30
2	13	1	2,27,37,21,	24,23,11,29,42,42,57,46,40
11	0	6	2,28, 8,53,20	24,18
7	4	5	2,30	24
18	0	3	2,31,42,13,20	23,43,49,41,15
3	8	4	2,31,52,30	23,42,13,20
14	4	2	2,33,36	23,26,15
25	0	0	2,35,20,40,32	23,10,27,25,45, 7, 1,52,30
10	8	1	2,35,31,12	23, 8,53,20
4	3	7	2,36,15	23, 2,24
6	12	0	2,37,27,50,24	22,51,44,31,36,17,46,40
0	7	6	2,38,12,11,15	22,45,20
11	3	4	2,40	22,30
7	7	3	2,42	22,13,20
1	2	9	2,42,45,37,30	22, 7, 6,14,24
18	3	1	2,43,50,24	21,58,21,33,45
3	11	2	2,44, 1,30	21,56,52,20,44,26,40
14	7	0	2,45,53,16,48	21,42, 5
8	2	6	2,46,40	21,36
4	6	5	2,48,45	21,20
15	2	3	2,50,40	21, 5,37,30
0	10	4	2,50,51,33,45	21, 4,11,51, 6,40
11	6	2	2,52,48	20,50
5	1	8	2,53,36,40	20,44, 9,36
22	2	0	2,54,45,45,36	20,35,57,42,53,26,15
7	10	1	2,54,57,36	20,34,34, 4,26,40
1	5	7	2,55,46,52,30	20,28,48
3	14	0	2,57, 8,49,12	20,19,19,34,45,35,48, 8,53,20
12	1	5	2,57,46,40	20,15
8	5	4	3	20
2	0	10	3, 0,50,41,40	19,54,23,36,57,36
19	1	2	3, 2, 2,40	19,46,31,24,22,30

the Otto Neugebauer papers  
 courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
4	9	3	3, 2, 15	19, 45, 11, 6, 40
15	5	1	3, 4, 19, 12	19, 31, 52, 30
0	13	2	3, 4, 31, 41, 15	19, 30, 33, 11, 46, 10, 22, 13, 20
9	0	7	3, 5, 11, 6, 40	19, 26, 24
11	9	0	3, 6, 37, 26, 24	19, 17, 24, 26, 40
5	4	6	3, 7, 30	19, 12
16	0	4	3, 9, 37, 46, 40	18, 59, 3, 45
1	8	5	3, 9, 50, 37, 30	18, 57, 46, 40
12	4	3	3, 12	18, 45
23	0	1	3, 14, 10, 50, 40	18, 32, 21, 56, 36, 5, 37, 30
8	8	2	3, 14, 24	18, 31, 6, 40
2	3	8	3, 15, 18, 45	18, 25, 55, 12
19	4	0	3, 16, 36, 28, 48	18, 18, 37, 58, 7, 30
4	12	1	3, 16, 49, 48	18, 17, 23, 37, 17, 2, 13, 20
0	16	0	3, 19, 17, 25, 21	18, 3, 50, 44, 13, 51, 49, 27, 54, 4, 26, 40
9	3	5	3, 20	18
5	7	4	3, 22, 30	17, 46, 40
16	3	2	3, 24, 48	17, 34, 41, 15
1	11	3	3, 25, 1, 52, 30	17, 33, 29, 52, 35, 33, 20
12	7	1	3, 27, 21, 36	17, 21, 40
6	2	7	3, 28, 20	17, 16, 48
8	11	0	3, 29, 57, 7, 12	17, 8, 48, 23, 42, 13, 20
2	6	6	3, 30, 56, 15	17, 4
13	2	4	3, 33, 20	16, 52, 30
9	6	3	3, 36	16, 40
3	1	9	3, 37, 0, 50	16, 35, 19, 40, 48
20	2	1	3, 38, 27, 12	16, 28, 46, 10, 18, 45
5	10	2	3, 38, 42	16, 27, 39, 15, 33, 20
16	6	0	3, 41, 11, 2, 24	16, 16, 33, 45
1	14	1	3, 41, 26, 1, 30	16, 15, 27, 39, 48, 28, 38, 31, 6, 40
10	1	6	3, 42, 13, 20	16, 12
6	5	5	3, 45	16
0	0	11	3, 46, 3, 22, 5	15, 55, 13, 53, 34, 4, 48
17	1	3	3, 47, 33, 20	15, 49, 13, 7, 30
2	9	4	3, 47, 48, 45	15, 48, 8, 53, 20
13	5	2	3, 50, 24	15, 37, 30
7	0	8	3, 51, 28, 53, 20	15, 33, 7, 12
24	1	0	3, 53, 1, 0, 48	15, 26, 58, 17, 10, 4, 41, 15
9	9	1	3, 53, 16, 48	15, 25, 55, 33, 20
3	4	7	3, 54, 22, 30	15, 21, 36

a	b	c	N	N-1
5	13	0	3,56,11,45,36	15,14,29,41, 4,11,51, 6,40
14	0	5	3,57, 2,13,20	15,11,15
10	4	4	4	15
21	0	2	4, 2,43,33,20	14,49,53,33,16,52,30
6	8	3	4, 3	14,48,53,20
0	3	9	4, 4, 8,26,15	14,44,44, 9,36
17	4	1	4, 5,45,36	14,38,54,22,30
2	12	2	4, 6,12,15	14,37,54,53,49,37,46,40
13	8	0	4, 8,49,55,12	14,28, 3,20
7	3	6	4,10	14,24
3	7	5	4,13, 7,30	14,13,20
14	3	3	4,16	14, 3,45
10	7	2	4,19,12	13,53,20
4	2	8	4,20,25	13,49,26,24
21	3	0	4,22, 8,38,24	13,43,58,28,35,37,30
6	11	1	4,22,26,24	13,43, 2,42,57,46,40
0	6	7	4,23,40,18,45	13,39,12
2	15	0	4,25,43,13,48	13,32,53, 3,10,23,52, 5,55,33,20
11	2	5	4,26,40	13,30
7	6	4	4,30	13,20
1	1	10	4,31,16, 2,30	13,16,15,44,38,24
18	2	2	4,33, 4	13,11, 0,56,15
3	10	3	4,33,22,30	13,10, 7,24,26,40
14	6	1	4,36,28,48	13, 1,15
8	1	7	4,37,46,40	12,57,36
10	10	0	4,39,56, 9,36	12,51,36,17,46,40
4	5	6	4,41,15	12,48
15	1	4	4,44,26,40	12,39,22,30
0	9	5	4,44,45,56,15	12,38,31, 6,40
11	5	3	4,48	12,30
5	0	9	4,49,21, 6,40	12,26,29,45,36
22	1	1	4,51,16,16	12,21,34,37,44, 3,45
7	9	2	4,51,36	12,20,44,26,40
1	4	8	4,52,58, 7,30	12,17,16,48
18	5	0	4,54,54,43,12	12,12,25,18,45
3	13	1	4,55,14,42	12,11,35,44,51,21,28,53,20
12	0	6	4,56,17,46,40	12, 9
8	4	5	5	12
19	0	3	5, 3,24,26,40	11,51,54,50,37,30

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study



a	b	c	N	$N^{-1}$
4	8	4	5, 3,45	11,51, 6,40
15	4	2	5, 7,12	11,43, 7,30
0	12	3	5, 7,32,48,45	11,42,19,55, 3,42,13,20
26	0	0	5,10,41,21, 4	11,35,13,42,52,33,30,56,15
11	8	1	5,11, 2,24	11,34,26,40
5	3	7	5,12,30	11,31,12
7	12	0	5,14,55,40,48	11,25,52,15,48, 8,53,20
1	7	6	5,16,24,22,30	11,22,40
12	3	4	5,20	11,15
8	7	3	5,24	11, 6,40
2	2	9	5,25,31,15	11, 3,33, 7,12
19	3	1	5,27,40,48	10,59,10,46,52,30
4	11	2	5,28, 3	10,58,26,10,22,13,20
15	7	0	5,31,46,33,36	10,51, 2,30
0	15	1	5,32, 9, 2,15	10,50,18,26,32,19, 5,40,44,26,40
9	2	6	5,33,20	10,48
5	6	5	5,37,30	10,40
16	2	3	5,41,20	10,32,48,45
1	10	4	5,41,43, 7,30	10,32, 5,55,33,20
12	6	2	5,45,36	10,25
6	1	8	5,47,13,20	10,22, 4,48
23	2	0	5,49,31,31,12	10,17,58,51,26,43, 7,30
8	10	1	5,49,55,12	10,17,17, 2,13,20
2	5	7	5,51,33,45	10,14,24
4	14	0	5,54,17,38,24	10, 9,39,47,22,47,54, 4,26,40
13	1	5	5,55,33,20	10, 7,30
9	5	4	6	10
3	0	10	6, 1,41,23,20	9,57,11,48,28,48
20	1	2	6, 4, 5,20	9,53,15,42,11,15
5	9	3	6, 4,30	9,52,35,33,20
16	5	1	6, 8,38,24	9,45,56,15
1	13	2	6, 9, 3,22,30	9,45,16,35,53, 5,11, 6,40
10	0	7	6,10,22,13,20	9,43,12
12	9	0	6,13,14,52,48	9,38,42,13,20
6	4	6	6,15	9,36
17	0	4	6,19,15,33,20	9,29,31,52,30
2	8	5	6,19,41,15	9,28,53,20
13	4	3	6,24	9,22,30
24	0	1	6,28,21,41,20	9,16,10,58,18, 2,48,45
9	8	2	6,28,48	9,15,33,20

a	b	c	N	N <sup>-1</sup>
3	3	8	6,30,37,30	9,12,57,36
20	4	0	6,33,12,57,36	9, 9,18,59, 3,45
5	12	1	6,33,39,36	9, 8,41,48,38,31, 6,40
1	16	0	6,38,34,50,42	9, 1,55,22, 6,55,54,43,57, 2,13,20
10	3	5	6,40	9
6	7	4	6,45	8,53,20
0	2	10	6,46,54, 3,45	8,50,50,29,45,36
17	3	2	6,49,36	8,47,20,37,30
2	11	3	6,50, 3,45	8,46,44,56,17,46,40
13	7	1	6,54,43,12	8,40,50
7	2	7	6,56,40	8,38,24
9	11	0	6,59,54,14,24	8,34,24,11,51, 6,40
3	6	6	7, 1,52,30	8,32
14	2	4	7, 6,40	8,26,15
10	6	3	7,12	8,20
4	1	9	7,14, 1,40	8,17,39,50,24
21	2	1	7,16,54,24	8,14,23, 5, 9,22,30
6	10	2	7,17,24	8,13,49,37,46,40
0	5	8	7,19,27,11,15	8,11,31,12
17	6	0	7,22,22, 4,48	8, 8,16,52,30
2	14	1	7,22,52, 3	8, 7,43,49,54,14,19,15,33,20
11	1	6	7,24,26,40	8, 6
7	5	5	7,30	8
1	0	11	7,32, 6,44,10	7,57,45,26,47, 2,24
18	1	3	7,35, 6,40	7,54,36,33,45
3	9	4	7,35,37,30	7,54, 4,26,40
14	5	2	7,40,48	7,48,45
8	0	8	7,42,57,46,40	7,46,33,36
25	1	0	7,46, 2, 1,36	7,43,29, 8,35, 2,20,37,30
10	9	1	7,46,33,36	7,42,57,46,40
4	4	7	7,48,45	7,40,48
6	13	0	7,52,23,31,12	7,37,14,50,32, 5,55,33,20
15	0	5	7,54, 4,26,40	7,35,37,30
0	8	6	7,54,36,33,45	7,35, 6,40
11	4	4	8	7,30
22	0	2	8, 5,27, 6,40	7,24,56,46,38,26,15
7	6	3	8, 6	7,24,26,40
1	3	9	8, 8,16,52,30	7,22,22, 4,48
18	4	1	8,11,31,12	7,19,27,11,15
3	12	2	8,12, 4,30	7,18,57,26,54,48,53,20

a	b	c	N	$N^{-1}$
14	8	0	8,17,39,50,24	7,14, 1,40
8	3	6	8,20	7,12
4	7	5	8,26,15	7, 6,40
15	3	3	8,32	7, 1,52,30
0	11	4	8,32,34,41,15	7, 1,23,57, 2,13,20
11	7	2	8,38,24	6,56,40
5	2	8	8,40,50	6,54,43,12
22	3	0	8,44,17,16,48	6,51,59,14,17,48,45
7	11	1	8,44,52,48	6,51,31,21,28,53,20
1	6	7	8,47,20,37,30	6,49,36
3	15	0	8,51,26,27,36	6,46,26,31,35,11,56, 2,57,46,40
12	2	5	8,53,20	6,45
8	6	4	9	6,40
2	1	10	9, 2,32, 5	6,38, 7,52,19,12
19	2	2	9, 6,8	6,35,30,28, 7,30
4	10	3	9, 6,45	6,35, 3,42,13,20
15	6	1	9,12,57,36	6,30,37,30
0	14	2	9,13,35, 3,45	6,30,11, 3,55,23,27,24,26,40
9	1	7	9,15,33,20	6,28,48
11	10	0	9,19,52,19,12	6,25,48, 8,53,20
5	5	6	9,22,30	6,24
16	1	4	9,28,53,20	6,19,41,15
1	9	5	9,29,31,52,30	6,19,15,33,20
12	5	3	9,36	6,15
6	0	9	9,38,42,13,20	6,13,14,52,48
23	1	1	9,42,32,32	6,10,47,18,52, 1,52,30
8	9	2	9,43,12	6,10,22,13,20
2	4	8	9,45,56,15	6, 8,38,24
19	5	0	9,49,49,26,24	6, 6,12,39,22,30
4	13	1	9,50,29,24	6, 5,47,52,25,40,44,26,40
13	0	6	9,52,35,33,20	6, 4,30
0	17	0	9,57,52,16, 3	6, 1,16,54,44,37,16,29,18, 1,28,53,20
9	4	5	10	6
20	0	3	10, 6,48,53,20	5,55,57,25,18,45
5	8	4	10, 7,30	5,55,33,20
16	4	2	10,14,24	5,51,33,45
1	12	3	10,15, 5,37,30	5,51, 9,57,31,51, 6,40
27	0	0	10,21,22,42, 8	5,47,36,51,26,16,45,28, 7,30
12	8	1	10,22, 4,48	5,47,13,20
6	3	7	10,25	5,45,36

a	b	c	N	N <sup>-1</sup>
8	12	0	10,29,51,21,36	5,42,56, 7,54, 4,26,40
2	7	6	10,32,48,45	5,41,20
13	3	4	10,40	5,37,30
9	7	3	10,48	5,33,20
3	2	9	10,51, 2,30	5,31,46,33,36
20	3	1	10,55,21,36	5,29,35,23,26,15
5	11	2	10, 56, 6	5,29,13, 5,11, 6,40
16	7	0	11, 3,33, 7,12	5,25,31,15
1	15	1	11, 4,18, 4,30	5,25, 9,13,16, 9,32,50,22,13,20
10	2	6	11, 6,40	5,24
6	6	5	11,15	5,20
0	1	11	11,18,10, 6,15	5,18,30,17,51,21,36
17	2	3	11,22,40	5,16,24,22,30
2	10	4	11,23,26,15	5,16, 2,57,46,40
13	6	2	11,31,12	5,12,30
7	1	8	11,34,26,40	5,11, 2,24
24	2	0	11,39, 3, 2,24	5, 8,59,25,43,21,33,45
9	10	1	11,39,50,24	5, 8,38,31, 6,40
3	5	7	11,43, 7,30	5, 7,12
5	14	0	11,48,35,16,48	5, 4,49,53,41,23,57, 2,13,20
14	1	5	11,51, 6,40	5, 3,45
10	5	4	12	5
4	0	10	12, 3,22,46,40	4,58,35,54,14,24
21	1	2	12, 8,10,40	4,56,37,51, 5,37,30
6	9	3	12, 9	4,56,17,46,40
0	4	9	12,12,25,18,45	4,54,54,43,12
17	5	1	12,17,16,48	4,52,58, 7,30
2	13	2	12,18, 6,45	4,52,38,17,56,32,35,33,20
11	0	7	12,20,44,26,40	4,51,36
13	9	0	12,26,29,45,36	4,49,21, 6,40
7	4	6	12,30	4,48
18	0	4	12,38,31, 6,40	4,44,45,56,15
3	8	5	12,39,22,30	4,44,26,40
14	4	3	12,48	4,41,15
25	0	1	12,56,43,22,40	4,38, 5,29, 9, 1,24,22,30
10	8	2	12,57,36	4,37,46,40
4	3	8	13, 1,15	4,36,28,48
21	4	0	13, 6,25,55,12	4,34,39,29,31,52,30
6	12	1	13, 7,19,12	4,34,20,54,19,15,33,20
0	7	7	13,11, 0,56,15	4,33, 4

From the Otto Neugebauer papers  
 Courtesy of the Shelby White and Léon Levy Archives Center  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
2	16	0	13,17, 9,41,24	4,30,57,41, 3,27,57,21,58,31, 6,40
11	3	5	13,20	4,30
7	7	4	13,30	4,26,40
1	2	10	13,33,48, 7,30	4,25,25,14,52,48
18	3	2	13,39,12	4,23,40,18,45
3	11	3	13,40, 7,30	4,23,22,28, 8,53,20
14	7	1	13,49,26,24	4,20,25
8	2	7	13,53,20	4,19,12
10	11	0	13,59,48,28,48	4,17,12, 5,55,33,20
4	6	6	14, 3,45	4,16
15	2	4	14,13,20	4,13, 7,30
0	10	5	14,14,17,48,45	4,12,50,22,13,20
11	6	3	14,24	4,10
5	1	9	14,28, 3,20	4, 8,49,55,12
22	2	1	14,33,48,48	4, 7,11,32,34,41,15
7	10	2	14,34,48	4, 6,54,48,53,20
1	5	8	14,38,54,22,30	4, 5,45,36
18	6	0	14,44,44, 9,36	4, 4, 8,26,15
3	14	1	14,45,44, 6	4, 3,51,54,57, 7, 9,37,46,40
12	1	6	14,48,53,20	4, 3
8	5	5	15	4
2	0	11	15, 4,13,28,20	3,58,52,43,23,31,12
19	1	3	15,10,13,20	3,57,18,16,52,30
4	9	4	15,11,15	3,57, 2,13,20
15	5	2	15,21,36	3,54,22,30
0	13	3	15,22,38,26,15	3,54, 6,38,21,14, 4,26,40
9	0	8	15,25,55,33,20	3,53,16,48
26	1	0	15,32, 4, 3,12	3,51,44,34,17,31,10,18,45
11	9	1	15,33, 7,12	3,51,28,53,20
5	4	7	15,37,30	3,50,24
7	13	0	15,44,47, 2,24	3,48,37,25,16, 2,57,46,40
16	0	5	15,48, 8,53,20	3,47,48,45
1	8	6	15,49,13, 7,30	3,47,33,20
12	4	4	16	3,45
23	0	2	16,10,54,13,20	3,42,28,23,19,13, 7,30
8	8	3	16,12	3,42,13,20
2	3	9	16,16,33,45	3,41,11, 2,24
19	4	1	16,23, 2,24	3,39,43,35,37,30
4	12	2	16,24, 9	3,39,28,43,27, 24,26,40

Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
15	8	0	16,35,19,40,48	3,37, 0,50
0	16	1	16,36,27, 6,45	3,36,46, 8,50,46,21,53,34,48,53,20
9	3	6	16,40	3,36
5	7	5	16,52,30	3,33,20
10	3	3	17, 4	3,30,56,15
1	11	4	17, 5, 9,22,30	3,30,41,58,31, 6,40
12	7	2	17,16,48	3,28,20
6	2	8	17,21,40	3,27,21,36
23	3	0	17,28,34,33,36	3,25,59,37, 8,54,22,30
8	11	1	17,29,45,36	3,25,45,40,44,26,40
2	6	7	17,34,41,15	3,24,48
4	15	0	17,42,52,55,12	3,23,13,15,47,35,58, 1,28,53,20
13	2	5	17,46,40	3,22,30
9	6	4	18	3,20
3	1	10	18, 5, 4,10	3,19, 3,56, 9,36
20	2	2	18,12,16	3,17,45,14, 3,45
5	10	3	18,13,30	3,17,31,51, 6,40
16	6	1	18,25,55,12	3,15,18,45
1	14	2	18,27,10, 7,30	3,15, 5,31,57,41,43,42,13,20
10	1	7	18,31, 6,40	3,14,24
12	10	0	18,39,44,38,24	3,12,54, 4,26,40
6	5	6	18,45	3,12
0	0	12	18,50,16,50,25	3,11, 6,10,42,48,57,36
17	1	4	18,57,46,40	3, 9,50,37,30
2	9	5	18,59, 3,45	3, 9,37,46,40
13	5	3	19,12	3, 7,30
7	0	9	19,17,24,26,40	3, 6,37,26,24
24	1	1	19,25, 5, 4	3, 5,23,39,26, 0,56,15
9	9	2	19,26,24	3, 5,11, 6,40
3	4	8	19,31,52,30	3, 4,19,12
20	5	0	19,39,38,52,48	3, 3, 6,19,41,15
5	13	1	19,40,58,48	3, 2,53,56,12,50,22,13,20
14	0	6	19,45,11, 6,40	3, 2,15
1	17	0	19,55,44,32, 6	3, 0,38,27,22,18,38,14,39, 0,44,26,40
10	4	5	20	3
21	0	3	20,13,37,46,40	2,57,58,42,39,22,30
6	8	4	20,15	2,57,46,40
0	3	10	20,20,42,11,15	2,56,56,49,55,12
17	4	2	20,28,48	2,55,46,52,30
2	12	3	20,30,11,15	2,55,34,58,45,55,33,20

From the Otto Neugebauer papers  
 Courtesy of the Shelby White and Leon Levy Archives Center  
 Princeton University, Princeton, NJ, USA

e	t	o	N	N <sup>-1</sup>
28	0	0	20,42,45,24,16	2,53,48,25,43, 8,22,44, 3,45
13	8	1	20,44, 9,36	2,53,36,40
7	3	7	20,50	2,52,48
9	12	0	20,59,42,43,12	2,51,28, 3,57, 2,13,20
3	7	6	21, 5,37,30	2,50,40
14	3	4	21,20	2,48,45
10	7	3	21,36	2,46,40
4	2	9	21,42, 5	2,45,53,16,48
21	3	1	21,50,43,12	2,44,47,41,43, 7,30
6	11	2	21,52,12	2,44,36,32,35,33,20
0	6	8	21,58,21,33,45	2,43,50,24
17	7	0	22, 7, 6,14,24	2,42,45,37,30
2	15	1	22, 8,36, 9	2,42,34,36,38, 4,46,25,11, 6,40
11	2	6	22,13,20	2,42
7	6	5	22,30	2,40
1	1	11	22,36,20,12,30	2,39,15, 8,55,40,48
18	2	3	22,45,20	2,38,12,11,15
3	10	4	22,46,52,30	2,38, 1,28,53,20
14	6	2	23, 2,24	2,36,15
8	1	8	23, 8,53,20	2,35,31,12
25	2	0	23,18, 6, 4,48	2,34,29,42,51,40,46,52,30
10	10	1	23,19,40,48	2,34,19,15,33,20
4	5	7	23,26,15	2,33,36
6	14	0	23,37,10,33,36	2,32,24,56,50,41,58,31, 6,40
15	1	5	23,42,13,20	2,31,52,30
0	9	6	23,43,49,41,15	2,31,42,13,20
11	5	4	24	2,30
5	0	10	24, 6,45,33,20	2,29,17,57, 7,12
22	1	2	24,16,21,20	2,28,18,55,32,48,45
7	9	3	24,18	2,28, 8,53,20
1	4	9	24,24,50,37,30	2,27,27,21,36
18	5	1	24,34,33,36	2,26,29, 3,45
3	13	2	24,36,13,30	2,26,19, 8,58,16,17,46,40
12	0	7	24,41,28,53,20	2,25,48
14	9	0	24,52,59,31,12	2,24,40,33,20
8	4	6	25	2,24
19	0	4	25,17, 2,13,20	2,22,22,58, 7,30
4	8	5	25,18,45	2,22,13,20
15	4	3	25,36	2,20,37,30
0	12	4	25,37,44, 3,45	2,20,27,59, 0,44,26,40

a	b	c	N	N <sup>-1</sup>
26	0	1	25,53,26,45,20	2,19, 2,44,34,30,42,11,15
11	8	2	25,55,12	2,18,53,20
5	3	8	26, 2,30	2,18,14,24
22	4	0	26,12,51,50,24	2,17,19,44,45,56,15
7	12	1	26,14,38,24	2,17,10,27, 9,37,46,40
1	7	7	26,22, 1,52,30	2,16,32
3	16	0	26,34,19,22,48	2,15,28,50,31,43,58,40,59,15,33,20
12	3	5	26,40	2,15
8	7	4	27	2,13,20
2	2	10	27, 7,36,15	2,12,42,37,26,24
19	3	2	27,18,24	2,11,50, 9,22,30
4	11	3	27,20,15	2,11,41,14, 4,26,40
15	7	1	27,38,52,48	2,10,12,30
0	15	2	27,40,45,11,15	2,10, 3,41,18,27,49, 8, 8,53,20
9	2	7	27,46,40	2, 9,36
11	11	0	27,59,36,57,36	2, 8,36, 2,57,46,40
5	6	6	28, 7,30	2, 8
16	2	4	28,26,40	2, 6,33,45
1	10	5	28,28,35,37,30	2, 6,25,11, 6,40
12	6	3	28,48	2, 5
6	1	9	28,56, 6,40	2, 4,24,57,36
23	2	1	29, 7,37,36	2, 3,35,46,17,20,37,30
8	10	2	29, 9,36	2, 3,27,24,26,40
2	5	8	29,17,48,45	2, 2,52,48
19	6	0	29,29,28,19,12	2, 2, 4,13, 7,30
4	14	1	29,31,28,12	2, 1,55,57,28,33,34,48,53,20
13	1	6	29,37,46,40	2, 1,30
0	18	0	29,53,36,48, 9	2, 0,25,38,14,52,25,29,46, 0,29,37,46,40
9	5	5	30	2
3	0	11	30, 8,26,56,40	1,59,26,21,41,45,36
20	1	3	30,20,26,40	1,58,39, 8,26,15
5	9	4	30,22,30	1,58,31, 6,40
16	5	2	30,43,12	1,57,11,15
1	13	3	30,45,16,52,30	1,57, 3,19,10,37, 2,13,20
10	0	8	30,51,51, 6,40	1,56,38,24
27	1	0	31, 4, 8, 6,24	1,55,52,17, 8,45,35, 9,22,30
12	9	1	31, 6,14,24	1,55,44,26,40
6	4	7	31,15	1,55,12
8	13	0	31,29,34, 4,48	1,54,18,42,38, 1,28,53,20
17	0	5	31,36,17,46,40	1,53,54,22,30

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA



a	b	c	N	N <sup>-1</sup>
2	8	6	31,38,26,15	1,53,46,40
13	4	4	32	1,52,30
24	0	2	32,21,48,26,40	1,51,14,11,39,36,33,45
9	8	3	32,24	1,51,6,40
3	3	9	32,33,7,30	1,50,35,31,12
20	4	1	32,46,4,48	1,49,51,47,48,45
5	12	2	32,48,18	1,49,44,21,43,42,13,20
16	8	0	33,10,39,21,36	1,48,30,25
1	16	1	33,12,54,13,30	1,48,23,4,25,23,10,56,47,24,26,40
10	3	6	33,20	1,48
6	7	5	33,45	1,46,40
0	2	11	33,54,30,18,45	1,46,10,5,57,7,12
17	3	3	34,8	1,45,28,7,30
2	11	4	34,10,18,45	1,45,20,59,15,33,20
13	7	2	34,33,36	1,44,10
7	2	8	34,43,20	1,43,40,48
24	3	0	34,57,9,7,12	1,42,59,48,34,27,11,15
9	11	1	34,59,31,12	1,42,52,50,22,13,20
3	6	7	35,9,22,30	1,42,24
5	15	0	35,25,45,50,24	1,41,36,37,53,47,59,0,44,26,40
14	2	5	35,33,20	1,41,15
10	6	4	36	1,40
4	1	10	36,10,8,20	1,39,31,58,4,48
21	2	2	36,24,32	1,38,52,37,1,52,30
6	10	3	36,27	1,38,45,55,33,20
0	5	9	36,37,15,56,15	1,38,18,14,24
17	6	1	36,51,50,24	1,37,39,22,30
2	14	2	36,54,20,15	1,37,32,45,58,50,51,51,6,40
11	1	7	37,2,13,20	1,37,12
13	10	0	37,19,29,16,48	1,36,27,2,13,20
7	5	6	37,30	1,36
1	0	12	37,40,33,40,50	1,35,33,5,21,24,28,48
18	1	4	37,55,33,20	1,34,55,18,45
3	9	5	37,58,7,30	1,34,48,53,20
14	5	3	38,24	1,33,45
8	0	9	38,34,48,53,20	1,33,18,43,12
25	1	1	38,50,10,8	1,32,41,49,43,0,28,7,30
10	9	2	38,52,48	1,32,35,33,20
4	4	8	39,3,45	1,32,9,36
21	5	0	39,19,17,45,36	1,31,33,9,50,37,30

a	b	c	N	N <sup>-1</sup>
6	13	1	39,21,57,36	1,31,26,58, 6,25,11, 6,40
15	0	6	39,30,22,13,20	1,31, 7,30
0	8	7	39,33, 2,48,45	1,31, 1,20
2	17	0	39,51,29, 4,12	1,30,19,13,41, 9,19, 7,19,30,22,13,20
11	4	5	40	1,30
22	0	3	40,27,15,33,20	1,28,59,21,19,41,15
7	8	4	40,30	1,28,53,20
1	3	10	40,41,24,22,30	1,28,28,24,57,36
18	4	2	40,57,36	1,27,53,26,15
3	12	3	41, 0,22,30	1,27,47,29,22,57,46,40
29	0	0	41,25,30,48,32	1,26,54,12,51,34,11,22, 1,52,30
14	8	1	41,29,19,12	1,26,48,20
8	3	7	41,40	1,26,24
10	12	0	41,59,25,26,24	1,25,44, 1,58,31, 6,40
4	7	6	42,11,15	1,25,20
15	3	4	42,40	1,24,22,30
0	11	5	42,42,53,26,15	1,24,16,47,24,26,40
11	7	3	43,12	1,23,20
5	2	9	43,24,10	1,22,56,38,24
22	3	1	43,41,26,24	1,22,23,50,51,33,45
7	11	2	43,44,24	1,22,18,16,17,46,40
1	6	8	43,56,43, 7,30	1,21,55,12
18	7	0	44,14,12,28,48	1,21,22,48,45
3	15	1	44,17,12,18	1,21,17,18,19, 2,23,12,35,33,20
12	2	6	44,26,40	1,21
8	6	5	45	1,20
2	1	11	45,12,40,25	1,19,37,34,27,50,24
19	2	3	45,30,40	1,19, 6, 5,37,30
4	10	4	45,33,45	1,19, 0,44,26,40
15	6	2	46, 4,48	1,18, 7,30
0	14	3	46, 7,55,18,45	1,18, 2,12,47, 4,41,28,53,20
9	1	8	46,17,46,40	1,17,45,36
26	2	0	46,36,12, 9,36	1,17,14,51,25,50,23,26,15
11	10	1	46,39,21,36	1,17, 9,37,46,40
5	5	7	46,52,30	1,16,48
7	14	0	47,14,21, 7,12	1,16,12,28,25,20,59,15,33,20
16	1	5	47,24,26,40	1,15,56,15

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	$N^{-1}$
1	9	6	47, 27, 39, 22, 30	1, 15, 51, 6, 40
12	5	4	48	1, 15
6	0	10	48, 13, 31, 6, 40	1, 14, 38, 58, 33, 36
23	1	2	48, 32, 42, 40	1, 14, 9, 27, 46, 24, 22, 30
8	9	3	48, 36	1, 14, 4, 26, 40
2	4	9	48, 49, 41, 15	1, 13, 43, 40, 48
19	5	1	49, 9, 7, 12	1, 13, 14, 31, 52, 30
4	13	2	49, 12, 27	1, 13, 9, 34, 29, 8, 8, 53, 20
13	0	7	49, 22, 57, 46, 40	1, 12, 54
15	9	0	49, 45, 59, 2, 24	1, 12, 20, 16, 40
0	17	1	49, 49, 21, 20, 15	1, 12, 15, 22, 56, 55, 27, 17, 51, 36, 17, 46, 40
9	4	6	50	1, 12
20	0	4	50, 34, 4, 26, 40	1, 11, 11, 29, 3, 45
5	8	5	50, 37, 30	1, 11, 6, 40
16	4	3	51, 12	1, 10, 18, 45
1	12	4	51, 15, 28, 7, 30	1, 10, 13, 59, 30, 22, 13, 20
27	0	1	51, 46, 53, 30, 40	1, 9, 31, 22, 17, 15, 21, 5, 37, 30
12	8	2	51, 50, 24	1, 9, 26, 40
6	3	8	52, 5	1, 9, 7, 12
23	4	0	52, 25, 43, 40, 48	1, 8, 39, 52, 22, 58, 7, 30
8	12	1	52, 29, 16, 48	1, 8, 35, 13, 34, 48, 53, 20
2	7	7	52, 44, 3, 45	1, 8, 16
4	16	0	53, 8, 38, 45, 36	1, 7, 44, 25, 15, 51, 59, 20, 29, 37, 46, 40
13	3	5	53, 20	1, 7, 30
9	7	4	54	1, 6, 40
3	2	10	54, 15, 12, 30	1, 6, 21, 18, 43, 12
20	3	2	54, 36, 48	1, 5, 55, 4, 41, 15
5	11	3	54, 40, 30	1, 5, 50, 37, 2, 13, 20
16	7	1	55, 17, 45, 36	1, 5, 6, 15
1	15	2	55, 21, 30, 22, 30	1, 5, 1, 50, 39, 13, 54, 34, 4, 26, 40
10	2	7	55, 33, 20	1, 4, 48
12	11	0	55, 59, 13, 55, 12	1, 4, 18, 1, 28, 53, 20
6	6	6	56, 15	1, 4
0	1	12	56, 30, 50, 31, 15	1, 3, 42, 3, 34, 16, 19, 12
17	2	4	56, 53, 20	1, 3, 16, 52, 30
2	10	5	56, 57, 11, 15	1, 3, 12, 35, 33, 20
13	6	3	57, 36	1, 2, 30
7	1	9	57, 52, 13, 20	1, 2, 12, 28, 48
24	2	1	58, 15, 15, 12	1, 1, 47, 53, 8, 40, 18, 45

From the Otto Neugebauer papers

Courtesy of The Shelby White and Leon Levy Archives Center

Institute for Studies in Mathematics

Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
9	10	2	58, 19, 12	1, 1, 43, 42, 13, 20
3	5	8	58, 35, 37, 30	1, 1, 26, 24
20	6	0	58, 58, 56, 38, 24	1, 1, 2, 6, 33, 45
5	14	1	59, 2, 56, 24	1, 0, 57, 58, 44, 16, 47, 24, 26, 40
14	1	6	59, 15, 33, 20	1, 0, 45
1	18	0	59, 47, 13, 36, 18	1, 0, 12, 49, 7, 26, 12, 44, 53, 0, 14, 48, 53, 20

V. O r d n u n g.

a	b	c	N	N <sup>-1</sup>
10	5	5	1	1
4	0	11	1, 0, 16, 53, 53, 20	59, 43, 10, 50, 52, 48
21	1	3	1, 0, 40, 53, 20	59, 19, 34, 13, 7, 30
6	9	4	1, 0, 45	59, 15, 33, 20
0	4	10	1, 1, 2, 6, 33, 45	58, 58, 56, 38, 24
17	5	2	1, 1, 26, 24	58, 35, 37, 30
2	13	3	1, 1, 30, 33, 45	58, 31, 39, 35, 18, 31, 6, 40
11	0	8	1, 1, 43, 42, 13, 20	58, 19, 12
28	1	0	1, 2, 8, 16, 12, 48	57, 56, 8, 34, 22, 47, 34, 41, 15
13	9	1	1, 2, 12, 28, 48	57, 52, 13, 20
7	4	7	1, 2, 30	57, 36
9	13	0	1, 2, 59, 8, 9, 36	57, 9, 21, 19, 0, 44, 26, 40
18	0	5	1, 3, 12, 35, 33, 20	56, 57, 11, 15
3	8	6	1, 3, 16, 52, 30	56, 53, 20
14	4	4	1, 4	56, 15
25	0	2	1, 4, 43, 36, 53, 20	55, 37, 5, 49, 48, 16, 52, 30
10	8	3	1, 4, 48	55, 33, 20
4	3	9	1, 5, 6, 15	55, 17, 45, 36
21	4	1	1, 5, 32, 9, 36	54, 55, 53, 54, 22, 30
6	12	2	1, 5, 36, 36	54, 52, 10, 51, 51, 6, 40
0	7	8	1, 5, 55, 4, 41, 15	54, 36, 48
17	8	0	1, 6, 21, 18, 43, 12	54, 15, 12, 30
2	16	1	1, 6, 25, 48, 27	54, 11, 32, 12, 41, 35, 28, 23, 42, 13, 20
11	3	6	1, 6, 40	54
7	7	5	1, 7, 30	53, 20
1	2	11	1, 7, 49, 0, 37, 30	53, 5, 2, 58, 33, 36
18	3	3	1, 8, 16	52, 44, 3, 45
3	11	4	1, 8, 20, 37, 30	52, 40, 29, 37, 46, 40
14	7	2	1, 9, 7, 12	52, 5
8	2	8	1, 9, 26, 40	51, 50, 24
25	3	0	1, 9, 54, 18, 14, 24	51, 29, 54, 17, 13, 35, 37, 30
10	11	1	1, 9, 59, 2, 24	51, 26, 25, 11, 6, 40
4	6	7	1, 10, 18, 45	51, 12
6	15	0	1, 10, 51, 31, 40, 48	50, 48, 18, 56, 53, 59, 30, 22, 13, 20
15	2	5	1, 11, 6, 40	50, 37, 30
0	10	6	1, 11, 11, 29, 3, 45	50, 34, 4, 26, 40
11	6	4	1, 12	50

From the Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
5	1	10	1,12,20,16,40	49,45,59, 2,24
22	2	2	1,12,49, 4	49,26,18,30,56,15
7	10	3	1,12,54	49,22,57,46,40
1	5	9	1,13,14,31,52,30	49, 9, 7,12
18	6	1	1,13,43,40,48	48,49,41,15
3	14	2	1,13,48,40,30	48,46,22,59,25,25,55,33,20
12	1	7	1,14, 4,26,40	48,36
14	10	0	1,14,38,58,33,36	48,13,31, 6,40
8	5	6	1,15	48
2	0	12	1,15,21, 7,21,40	47,46,32,40,42,14,24
19	1	4	1,15,51, 6,40	47,27,39,22,30
4	9	5	1,15,56,15	47,24,26,40
15	5	3	1,16,48	46,52,30
0	13	4	1,16,53,12,11,15	46,49,19,40,14,48,53,20
9	0	9	1,17, 9,37,46,40	46,39,21,36
26	1	1	1,17,40,20,16	46,20,54,51,30,14, 3,45
11	9	2	1,17,45,36	46,17,46,40
5	4	8	1,18, 7,30	46, 4,48
22	5	0	1,18,38,35,31,12	45,46,34,55,18,45
7	13	1	1,18,43,55,12	45,43,29, 3,12,35,33,20
16	0	6	1,19, 0,44,26,40	45,33,45
1	8	7	1,19, 6, 5,37,30	45,30,40
3	17	0	1,19,42,58, 8,24	45, 9,36,50,34,39,33,39,45,11, 6,40
12	4	5	1,20	45
23	0	3	1,20,54,31, 6,40	44,29,40,39,50,37,30
8	8	4	1,21	44,26,40
2	3	10	1,21,22,48,45	44,14,12,28,48
19	4	2	1,21,55,12	43,56,43, 7,30
4	12	3	1,22, 0,45	43,53,44,41,28,53,20
30	0	0	1,22,51, 1,37, 4	43,27, 6,25,47, 5,41, 0,56,15
15	8	1	1,22,56,38,24	43,24,10
0	16	2	1,23, 2,15,33,45	43,21,13,46, 9,16,22,42,57,46,40
9	3	7	1,23,20	43,12
11	12	0	1,23,58,50,52,48	42,52, 0,59,15,33,20
5	7	6	1,24,22,30	42,40
16	3	4	1,25,20	42,11,15
1	11	5	1,25,25,46,52,30	42, 8,23,42,13,20
12	7	3	1,26,24	41,40
6	2	9	1,26,48,20	41,28,19,12
23	3	1	1,27,22,52,48	41,11,55,25,46,52,30
8	11	2	1,27,28,48	41, 9, 8, 8,53,20

the Otto Neugebauer papers  
 the Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
2	6	8	1,27,53,26,15	40,57,36
19	7	0	1,28,28,24,57,36	40,41,24,22,30
4	15	1	1,28,34,24,36	40,38,39, 9,31,11,36,17,46,40
13	2	6	1,28,53,20	40,30
0	19	0	1,29,40,50,24,27	40, 8,32,44,57,28,29,55,20, 9,52,35,33,20
9	6	5	1,30	40
3	1	11	1,30,25,20,50	39,48,47,13,55,12
20	2	3	1,31, 1,20	39,33, 2,48,45
5	10	4	1,31, 7,30	39,30,22,13,20
16	6	2	1,32, 9,36	39, 3,45
1	14	3	1,32,15,50,37,30	39, 1, 6,23,32,20,44,26,40
10	1	8	1,32,35,33,20	38,52,48
27	2	0	1,33,12,24,19,12	38,37,25,42,55,11,43, 7,30
12	10	1	1,33,18,43,12	38,34,48,53,20
6	5	7	1,33,45	38,24
0	0	13	1,34,11,24,12, 5	38,13,14, 8,33,47,31,12
8	14	0	1,34,28,42,14,24	38, 6,14,12,40,29,37,46,40
17	1	5	1,34,48,53,20	37,58, 7,30
2	9	6	1,34,55,18,45	37,55,33,20
13	5	4	1,36	37,30
7	0	10	1,36,27, 2,13,20	37,19,29,16,48
24	1	2	1,37, 5,25,20	37, 4,43,53,12,11,15
9	9	3	1,37,12	37, 2,13,20
3	4	9	1,37,39,22,30	36,51,50,24
20	5	1	1,38,18,14,24	36,37,15,56,15
5	13	2	1,38,24,54	36,34,47,14,34, 4,26,40
14	0	7	1,38,45,55,33,20	36,27
6	9	0	1,39,31,58, 4,48	36,10, 8,20
1	17	1	1,39,38,42,40,30	36, 7,41,28,27,43,38,55,48, 8,53,20
0	4	6	1,40	36
21	0	4	1,41, 8, 8,53,20	35,35,44,31,52,30
6	8	5	1,41,15	35,33,20
0	3	11	1,41,43,30,56,15	35,23,21,59, 2,24
7	4	3	1,42,24	35, 9,22,30
2	12	4	1,42,30,56,15	35, 6,59,45,11, 6,40
8	0	1	1,43,33,47, 1,20	34,45,41, 8,37,40,32,48,45
3	8	2	1,43,40,48	34,43,20
7	3	8	1,44,10	34,33,36
4	4	0	1,44,51,27,21,36	34,19,56,11,29, 3,45
9	12	1	1,44,58,33,36	34,17,36,47,24,26,40

a	b	c	N	N <sup>-1</sup>
3	7	7	1,45,28, 7,30	34, 8
5	16	0	1,46,17,17,31,12	33,52,12,37,55,59,40,14,48,53,20
14	3	5	1,46,40	33,45
10	7	4	1,48	33,20
4	2	10	1,48,30,25	33,10,39,21,36
21	3	2	1,49,13,36	32,57,32,20,37,30
6	11	3	1,49,21	32,55,18,31, 6,40
0	6	9	1,49,51,47,48,45	32,46, 4,48
17	7	1	1,50,35,31,12	32,33, 7,30
2	15	2	1,50,43, 0,45	32,30,55,19,36,57,17, 2,13,20
11	2	7	1,51, 6,40	32,24
13	11	0	1,51,58,27,50,24	32, 9, 0,44,26,40
7	6	6	1,52,30	32
1	1	12	1,53, 1,41, 2,30	31,51, 1,47, 8, 9,36
18	2	4	1,53,46,40	31,38,26,15
3	10	5	1,53,54,22,30	31,36,17,46,40
14	6	3	1,55,12	31,15
8	1	9	1,55,44,26,40	31, 6,14,24
25	2	1	1,56,30,30,24	30,53,56,34,20, 9,22,30
10	10	2	1,56,38,24	30,51,51, 6,40
4	5	8	1,57,11,15	30,43,12
21	6	0	1,57,57,53,16,48	30,31, 3,16,52,30
6	14	1	1,58, 5,52,48	30,28,59,22, 8,23,42,13,20
15	1	6	1,58,31, 6,40	30,22,30
0	9	7	1,58,39, 8,26,15	30,20,26,40
2	18	0	1,59,34,27,12,36	30, 6,24,33,43, 6,22,26,30, 7,24,26,40
11	5	5	2	30
5	0	11	2, 0,33,47,46,40	29,51,35,25,26,24
22	1	3	2, 1,21,46,40	29,39,47, 6,33,45
7	9	4	2, 1,30	29,37,46,40
1	4	10	2, 2, 4,13, 7,30	29,29,28,19,12
18	5	2	2, 2,52,48	29,17,48,45
3	13	3	2, 3,11, 7,30	29,15,49,47,39,15,33,20
12	0	8	2, 3,27,24,26,40	29, 9,36
29	1	0	2, 4,16,32,25,36	28,58, 4,17,11,23,47,20,37,30
14	9	1	2, 4,24,57,36	28,56, 6,40
8	4	7	2, 5	28,48
10	13	0	2, 5,58,16,19,12	28,34,40,39,30,22,13,20
19	0	5	2, 6,25,11, 6,40	28,28,35,37,30
4	8	6	2, 6,33,45	28,26,40

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ



	a	b	c	N	N <sup>-1</sup>
	15	4	4	2, 8	28, 7, 30
-	0	12	5	2, 8, 8, 40, 18, 45	28, 5, 35, 48, 8, 53, 20
+	26	0	2	2, 9, 27, 13, 46, 40	27, 48, 32, 54, 54, 8, 26, 15
	11	8	3	2, 9, 36	27, 46, 40
	5	3	9	2, 10, 12, 30	27, 38, 52, 48
-	22	4	1	2, 11, 4, 19, 12	27, 27, 56, 57, 11, 15
-	7	12	2	2, 11, 13, 12	27, 26, 5, 25, 55, 33, 20
-	1	7	8	2, 11, 50, 9, 22, 30	27, 18, 24
+	18	8	0	2, 12, 42, 37, 26, 24	27, 7, 36, 15
-	3	16	1	2, 12, 51, 36, 54	27, 5, 46, 6, 20, 47, 44, 11, 51, 6, 40
	12	3	6	2, 13, 20	27
	8	7	5	2, 15	26, 40
+	2	2	11	2, 15, 38, 1, 15	26, 32, 31, 29, 16, 48
	19	3	3	2, 16, 32	26, 22, 1, 52, 30
	4	11	4	2, 16, 41, 15	26, 20, 14, 48, 53, 20
-	15	7	2	2, 18, 14, 24	26, 2, 30
-	0	15	3	2, 18, 23, 45, 56, 15	26, 0, 44, 15, 41, 33, 49, 37, 46, 40
	9	2	8	2, 18, 53, 20	25, 55, 12
+	26	3	0	2, 19, 48, 36, 28, 48	25, 44, 57, 8, 36, 47, 48, 45
+	11	11	1	2, 19, 58, 4, 48	25, 43, 12, 35, 33, 20
	5	6	7	2, 20, 37, 30	25, 36
+	7	15	0	2, 21, 43, 3, 21, 36	25, 24, 9, 28, 26, 59, 45, 11, 6, 40
-	16	2	5	2, 22, 13, 20	25, 18, 45
	1	10	6	2, 22, 22, 58, 7, 30	25, 17, 2, 13, 20
	12	6	4	2, 24	25
+	6	1	10	2, 24, 40, 33, 20	24, 52, 59, 31, 12
	23	2	2	2, 25, 38, 8	24, 43, 9, 15, 28, 7, 30
-	8	10	3	2, 25, 48	24, 41, 28, 53, 20
-	2	5	9	2, 26, 29, 3, 45	24, 34, 33, 36
-	19	6	1	2, 27, 27, 21, 36	24, 24, 50, 37, 30
	4	14	2	2, 27, 37, 21	24, 23, 11, 29, 42, 42, 57, 46, 40
	13	1	7	2, 28, 8, 53, 20	24, 18
+	15	10	0	2, 29, 17, 57, 7, 12	24, 6, 45, 33, 20
-	0	18	1	2, 29, 28, 4, 0, 45	24, 5, 7, 38, 58, 29, 5, 57, 12, 5, 55, 33, 20
-	9	5	6	2, 30	24
+	3	0	12	2, 30, 42, 14, 43, 20	23, 53, 16, 20, 21, 7, 12
	20	1	4	2, 31, 42, 13, 20	23, 43, 49, 41, 15
-	5	9	5	2, 31, 52, 30	23, 42, 13, 20
	16	5	3	2, 33, 36	23, 26, 15
-	1	13	4	2, 33, 46, 24, 22, 30	23, 24, 39, 50, 7, 24, 26, 40
	10	0	9	2, 34, 19, 15, 33, 20	23, 19, 40, 48

From the collection of the Hebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
27	1	1	2,35,20,40,32	23,10,27,25,45,7,1,52,30
+ 12	9	2	2,35,31,12	23,8,53,20
6	4	8	2,36,15	23,2,24
+ 23	5	0	2,37,17,11,2,24	22,53,17,27,39,22,30
- 8	13	1	2,37,27,50,24	22,51,44,31,36,17,46,40
- 17	0	6	2,38,1,28,53,20	22,46,52,30
2	8	7	2,38,12,11,15	22,45,20
+ 4	17	0	2,39,25,56,16,48	22,34,48,25,17,19,46,49,52,35,33,20
- 13	4	5	2,40	22,30
- 24	0	3	2,41,49,2,13,20	22,14,50,19,55,18,45
- 9	8	4	2,42	22,13,20
- 3	3	10	2,42,45,37,30	22,7,6,14,24
- 20	4	2	2,43,50,24	21,58,21,33,45
- 5	12	3	2,44,1,30	21,56,52,20,44,26,40
+ 31	0	0	2,45,42,3,14,8	21,43,33,12,53,32,50,30,28,7,30
16	8	1	2,45,53,16,48	21,42,5
+ 1	16	2	2,46,4,31,7,30	21,40,36,53,4,38,11,21,28,53,20
10	3	7	2,46,40	21,36
- 12	12	0	2,47,57,41,45,36	21,26,0,29,37,46,40
6	7	6	2,48,45	21,20
- 0	2	12	2,49,32,31,33,45	21,14,1,11,25,26,24
- 17	3	4	2,50,40	21,5,37,30
- 2	11	5	2,50,51,33,45	21,4,11,51,6,40
- 13	7	3	2,52,48	20,50
- 7	2	9	2,53,36,40	20,44,9,36
+ 24	3	1	2,54,45,45,36	20,35,57,42,53,26,15
- 9	11	2	2,54,57,36	20,34,34,4,26,40
3	6	8	2,55,46,52,30	20,28,48
- 20	7	0	2,56,56,49,55,12	20,20,42,11,15
+ 5	15	1	2,57,8,49,12	20,19,19,34,45,35,48,8,53,20
14	2	6	2,57,46,40	20,15
- 1	19	0	2,59,21,40,48,54	20,4,16,22,28,44,14,57,40,4,56,17,46,40
10	6	5	3	20
4	1	11	3,0,50,41,40	19,54,23,36,57,36
21	2	3	3,2,2,40	19,46,31,24,22,30
6	10	4	3,2,15	19,45,11,6,40
0	5	10	3,3,6,19,41,15	19,39,38,52,48
17	6	2	3,4,19,12	19,31,52,30
2	14	3	3,4,31,41,15	19,30,33,11,46,10,22,13,20
11	1	8	3,5,11,6,40	19,26,24

b	c	N	N <sup>-1</sup>
2	0	3, 6, 24, 48, 38, 24	19, 18, 42, 51, 27, 35, 51, 33, 45
10	1	3, 6, 37, 26, 24	19, 17, 24, 26, 40
5	7	3, 7, 30	19, 12
0	13	3, 8, 22, 48, 24, 10	19, 6, 37, 4, 16, 53, 45, 36
14	0	3, 8, 57, 24, 28, 48	19, 3, 7, 6, 20, 14, 48, 53, 20
1	5	3, 9, 37, 46, 40	18, 59, 3, 45
9	6	3, 9, 50, 37, 30	18, 57, 46, 40
5	4	3, 12	18, 45
0	10	3, 12, 54, 4, 26, 40	18, 39, 44, 38, 24
1	2	3, 14, 10, 50, 40	18, 32, 21, 56, 36, 5, 37, 30
9	3	3, 14, 24	18, 31, 6, 40
4	9	3, 15, 18, 45	18, 25, 55, 12
5	1	3, 16, 36, 28, 48	18, 18, 37, 58, 7, 30
13	2	3, 16, 49, 48	18, 17, 23, 37, 17, 2, 13, 20
0	7	3, 17, 31, 51, 6, 40	18, 13, 30
8	8	3, 17, 45, 14, 3, 45	18, 12, 16
9	0	3, 19, 3, 56, 9, 36	18, 5, 4, 10
17	1	3, 19, 17, 25, 21	18, 3, 50, 44, 13, 51, 49, 27, 54, 4, 26, 40
4	6	3, 20	18
0	4	3, 22, 16, 17, 46, 40	17, 47, 52, 15, 56, 15
7	5	3, 22, 30	17, 46, 40
3	11	3, 23, 27, 1, 52, 30	17, 41, 40, 59, 31, 12
4	3	3, 24, 48	17, 34, 41, 15
12	4	3, 25, 1, 52, 30	17, 33, 29, 52, 35, 33, 20
0	1	3, 27, 7, 34, 2, 40	17, 22, 50, 34, 18, 50, 16, 24, 22, 30
8	2	3, 27, 21, 36	17, 21, 40
3	8	3, 28, 20	17, 16, 48
4	0	3, 29, 42, 54, 43, 12	17, 9, 58, 5, 44, 31, 52, 30
12	1	3, 29, 57, 7, 12	17, 8, 48, 23, 42, 13, 20
7	7	3, 30, 56, 15	17, 4
16	0	3, 32, 34, 35, 2, 24	16, 56, 6, 18, 57, 59, 50, 7, 24, 26, 40
3	5	3, 33, 20	16, 52, 30
0	6	3, 33, 34, 27, 11, 15	16, 51, 21, 28, 53, 20
7	4	3, 36	16, 40
2	10	3, 37, 0, 50	16, 35, 19, 40, 48
3	2	3, 38, 27, 12	16, 28, 46, 10, 18, 45
11	3	3, 38, 42,	16, 27, 39, 15, 33, 20
6	9	3, 39, 43, 35, 37, 30	16, 23, 2, 24
7	1	3, 41, 11, 2, 24	16, 16, 33, 45
15	2	3, 41, 26, 1, 30	16, 15, 27, 39, 48, 28, 38, 31, 6, 40

a	b	c	N	N <sup>-1</sup>
12	2	7	3,42,13,20	16,12
14	11	0	3,43,56,55,40,48	16, 4,30,22,13,20
8	6	6	3,45	16
2	1	12	3,46, 3,22, 5	15,55,30,53,34, 4,48
19	2	4	3,47,33,20	15,49,13, 7,30
4	10	5	3,47,48,45	15,48, 8,53,20
15	6	3	3,50,24	15,37,30
0	14	4	3,50,39,36,33,45	15,36,26,33,24,56,17,46,40
9	1	9	3,51,28,53,20	15,33, 7,12
26	2	1	3,53, 1, 0,48	15,26,58,17,10, 4,41,15
11	10	2	3,53,16,48	15,25,55,33,20
5	5	8	3,54,22,30	15,21,36
22	6	0	3,55,55,46,33,36	15,15,31,38,26,15
7	14	1	3,56,11,45,36	15,14,29,41, 4,11,51, 6,40
16	1	6	3,57, 2,13,20	15,11,15
1	9	7	3,57,18,16,52,30	15,10,13,20
3	18	0	3,59, 8,54,25,12	15, 3,12,16,51,33,11,13,15, 3,42,13,20
12	5	5	4	15
6	0	11	4, 1, 7,35,33,20	14,55,47,42,43,12
23	1	3	4, 2,43,33,20	14,49,53,33,16,52,30
8	9	4	4, 3	14,48,53,20
2	4	10	4, 4, 8,26,15	14,44,44, 9,36
19	5	2	4, 5,45,36	14,38,54,22,30
4	13	3	4, 6, 2,15	14,37,54,53,49,37,46,40
13	0	8	4, 6,54,48,53,20	14,34,48
30	1	0	4, 8,33, 4,51,12	14,29, 2, 8,35,41,53,40,18,45
15	9	1	4, 8,49,55,12	14,28, 3,20
0	17	2	4, 9, 6,46,41,15	14,27, 4,35,23, 5,27,34,19,15,33,20
9	4	7	4,10	14,24
11	13	0	4,11,56,32,38,24	14,17,20,19,45,11, 6,40
20	0	5	4,12,50,22,13,20	14,14,17,48,45
5	8	6	4,13, 7,30	14,13,20
16	4	4	4,16	14, 3,45
1	12	5	4,16,17,20,37,30	14, 2,47,54, 4,26,40
27	0	2	4,18,54,27,33,20	13,54,16,27,27, 4,13, 7,30
12	8	3	4,19,12	13,53,20
6	3	9	4,20,25	13,49,26,24
23	4	1	4,22, 8,38,24	13,43,58,28,35,37,30
8	12	2	4,22,26,24	13,43, 2,42,57,46,40
2	7	8	4,23,40,18,45	13,39,12

a	b	c	N	$n^{-1}$
19	8	0	4,25,25,14,52,48	13,33,48, 7,30
4	16	1	4,25,43,13,48	13,32,53, 3,10,23,52, 5,55,33,20
13	3	6	4,26,40	13,30
0	20	0	4,29, 2,31,13,21	13,22,50,54,59, 9,29,58,26,43,17,31,51, 6,4
9	7	5	4,30	13,20
3	2	11	4,31,16, 2,30	13,16,15,44,38,24
20	3	3	4,33, 4	13,11, 0,56,15
5	11	4	4,33,22,30	13,10, 7,24,26,40
16	7	2	4,36,28,48	13, 1,15
1	15	3	4,36,47,31,52,30	13, 0,22, 7,50,46,54,48,53,20
10	2	8	4,37,46,40	12,57,36
27	3	0	4,39,37,12,57,36	12,52,28,34, 18,23,54,22,30
12	11	1	4,39,56, 9,36	12,51,36,17,46,40
6	6	7	4,41, 15	12,48
0	1	13	4,42,34,12,36,15	12,44,24,42,51,15,50,24
8	15	0	4,43,26, 6,43,12	12,42, 4,44,13,29,52,35,33,20
17	2	5	4,44,26,40	12,39,22,30
2	10	6	4,44,45,56,15	12,38,31, 6,40
13	6	4	4,48	12,30
7	1	10	4,49,21, 6,40	12,26,29,45,36
24	2	2	4,51,16,16	12,21,34,37,44, 3,45
9	10	3	4,51,36	12,20,44,26,40
3	5	9	4,52,58, 7,30	12,17,16,48
20	6	1	4,54,54,43,12	12,12,25,18,45
5	14	2	4,55,14,42	12,11,35,44,51,21,28,53,20
14	1	7	4,56,17,46,40	12, 9
16	10	0	4,58,35,54,14,24	12, 3,22,46,40
1	18	1	4,58,56, 8, 1,30	12, 2,33,49,29,14,32,58,36, 2,57,46,40
10	5	6	5	12
4	0	12	5, 1,24,29,26,40	11,56,38,10,10,33,36
21	1	4	5, 3,24,26,40	11,51,54,50,37,30
6	9	5	5, 3,45	11,51, 6,40
0	4	11	5, 5,10,32,48,45	11,47,47,19,40,48
17	5	3	5, 7,12	11,43, 7,30
2	13	4	5, 7,32,48,45	11,42,19,55, 3,42,13,20
11	0	9	5, 8,38,31, 6,40	11,39,50,24
28	1	1	5,10,41,21, 4	11,35,13,42,52,33,30,56,15
13	9	2	5,11, 2,24	11,34,26,40
7	4	8	5,12,30	11,31,12
24	5	0	5,14,34,22, 4,48	11,26,38,43,49,41,15

From the *Journal of Number Theory*, Vol. 1, 1969, pp. 1-10.  
 Copyright © 1969 by White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
9	13	1	5,14,55,40,48	11,25,52,15,48, 8,53,20
18	0	6	5,16, 2,57,46,40	11,23,26,15
3	8	7	5,16,24,22,30	11,22,40
5	17	0	5,18,51,52,33,36	11,17,24,12,38,39,53,24,56,17,46,40
14	4	5	5,20	11,15
25	0	3	5,23,38, 4,26,40	11, 7,25, 9,57,39,22,30
10	8	4	5,24	11, 6,40
4	3	10	5,25,31,15	11, 3,33, 7,12
21	4	2	5,27,40,48	10,59,10,46,52,30
6	12	3	5,28, 3	10,58,26,10,22,13,20
0	7	9	5,29,35,23,26,15	10,55,21,36
32	0	0	5,31,24, 6,28,16	10,51,46,36,26,46,25,15,14, 3,45
17	8	1	5,31,46,33,36	10,51, 2,30
2	16	2	5,32, 9, 2,15	10,50,18,26,32,19, 5,40,44,26,40
11	3	7	5,33,20	10,48
13	12	0	5,35,55,23,31,12	10,43, 0,14,48,53,20
7	7	6	5,37,30	10,40
1	2	12	5,39, 5, 3, 7,30	10,37, 0,35,42,43,12
18	3	4	5,41,20	10,32,48,45
3	11	5	5,41,43, 7,30	10,32, 5,55,33,20
14	7	3	5,45,36	10,25
8	2	9	5,47,13,20	10,22, 4,48
25	3	1	5,49,31,31,12	10,17,58,51,26,43, 7,30
10	11	2	5,49,55,12	10,17,17, 2,13,20
4	6	8	5,51,33,45	10,14,24
21	7	0	5,53,53,39,50,24	10,10,21, 5,37,30
6	15	1	5,54,17,38,24	10, 9,39,47,22,47,54, 4,26,40
15	2	6	5,55,33,20	10, 7,30
0	10	7	5,55,57,25,18,45	10, 6,48,53,20
2	19	0	5,58,43,21,37,48	10, 2, 8,11,14,22, 7,28,50, 2,28, 8,53,20
11	6	5	6	10
5	1	11	6, 1,41,23,20	9,57,11,48,28,48
22	2	3	6, 4, 5,20	9,53,15,42,11,15
7	10	4	6, 4,30	9,52,35,33,20
1	5	10	6, 6,12,39,22,30	9,49,49,26,24
18	6	2	6, 8,38,24	9,45,56,15
3	14	3	6, 9, 3,22,30	9,45,16,35,53, 5,11, 6,40
12	1	8	6,10,22,13,20	9,43,12
29	2	0	6,12,49,37,16,48	9,39,21,25,43,47,55,46,52,30
14	10	1	6,13,14,52,48	9,38,42,13,20

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton

a	b	c	N	N <sup>-1</sup>
8	5	7	6,15	9,36
2	0	13	6,16,45,36,48,20	9,33,18,32, 8,26,52,48
10	14	0	6,17,54,48,57,36	9,31,33,33,10, 7,24,26,40
19	1	5	6,19,15,33,20	9,29,31,52,30
4	9	6	6,19,41,15	9,28,53,20
15	5	4	6,24	9,22,30
0	13	5	6,24,26, 0,56,15	9,21,51,56, 2,57,46,40
9	0	10	6,25,48, 8,53,20	9,19,52,19,12
26	1	2	6,28,21,41,20	9,16,10,58,18, 2,48,45
11	9	3	6,28,48	9,15,33,20
5	4	9	6,30,37,30	9,12,57,36
22	5	1	6,33,12,57,36	9, 9,18,59, 3,45
7	13	2	6,33,39,36	9, 8,41,48,38,31, 6,40
16	0	7	6,35, 3,42,13,20	9, 6,45
1	8	8	6,35,30,28, 7,30	9, 6, 8
18	9	0	6,38, 7,52,19,12	9, 2,32, 5
3	17	1	6,38,34,50,42	9, 1,55,22, 6,55,54,43,57, 2,13,20
12	4	6	6,40	9
23	0	4	6,44,32,35,33,20	8,53,56, 7,58, 7,30
8	8	5	6,45	8,53,20
2	3	11	6,46,54, 3,45	8,50,50,29,45,36
19	4	3	6,49,36	8,47,20,37,30
4	12	4	6,50, 3,45	8,46,44,56,17,46,40
30	0	1	6,54,15, 8, 5,20	8,41,25,17, 9,25, 8,12,11,15
15	8	2	6,54,43,12	8,40,50
0	16	3	6,55,11,17,48,45	8,40,14,45,13,51,16,32,35,33,20
9	3	8	6,56,40	8,38,24
26	4	0	6,59,25,49,26,24	8,34,59, 2,52,15,56,15
11	12	1	6,59,54,14,24	8,34,24,11,51, 6,40
5	7	7	7, 1,52,30	8,32
7	16	0	7, 5, 9,10, 4,48	8,28, 3, 9,28,59,55, 3,42,13,20
16	3	5	7, 6,40	8,26,15
1	11	6	7, 7, 8,54,22,30	8,25,40,44,26,40
12	7	4	7,12	8,20
6	2	10	7,14, 1,40	8,17,39,50,24
23	3	2	7,16,54,24	8,14,23, 5, 9,22,30
8	11	3	7,17,24	8,13,49,37,46,40
2	6	9	7,19,27,11,15	8,11,31,12
19	7	1	7,22,22, 4,48	8, 8,16,52,30
4	15	2	7,22,52, 3	8, 7,43,49,54,14,19,15,33,20

From the Leo Reugebauer papers  
 Courtesy of the White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
13	2	7	7,24,26,40	8, 6
15	11	0	7,27,53,51,21,36	8, 2,15,11, 6,40
0	19	1	7,28,24,12, 2,15	8, 1,42,32,59,29,41,59, 4, 1,58,31, 6,40
9	6	6	7,30	8
3	1	12	7,32, 6,44,10	7,57,45,26,47, 2,24
20	2	4	7,35, 6,40	7,54,36,33,45
5	10	5	7,35,37,30	7,54, 4,26,40
16	6	3	7,40,48	7,48,45
1	14	4	7,41,19,13, 7,30	7,48,13,16,42,28, 8,53,20
10	1	9	7,42,57,46,40	7,46,33,36
27	2	1	7,46, 2, 1,36	7,43,29, 8,35, 2,20,37,30
12	10	2	7,46,33,36	7,42,57,46,40
6	5	8	7,48,45	7,40,48
0	0	14	7,50,57, 1, 0,25	7,38,38,49,42,45,30,14,24
23	6	0	7,51,51,33, 7,12	7,37,45,49,13, 7,30
8	14	1	7,52,23,31,12	7,37,14,50,52, 5,55,33,20
17	1	6	7,54, 4,26,40	7,35,37,30
2	9	7	7,54,36,33,45	7,35, 6,40
4	18	0	7,58,17,48,50,24	7,31,36, 8,25,46,35,36,37,31,51, 6,40
13	5	5	8	7,30
7	0	11	8, 2,15,11, 6,40	7,27,53,51,21,36
24	1	3	8, 5,27, 6,40	7,24,56,46,38,26,15
9	9	4	8, 6	7,24,26,40
3	4	10	8, 8,16,52,30	7,22,22, 4,48
20	5	2	8,11,31,12	7,19,27,11,15
5	13	3	8,12, 4,30	7,18,57,26,54,48,53,20
14	0	8	8,13,49,37,46,40	7,17,24
31	1	0	8,17, 6, 9,42,24	7,14,31, 4,17,50,56,50, 9,22,30
16	9	1	8,17,39,50,24	7,14, 1,40
1	17	2	8,18,13,33,22,30	7,13,32,17,41,32,43,47, 9,37,46,40
10	4	7	8,20	7,12
12	13	0	8,23,53, 5,16,48	7, 8,40, 9,52,35,33,20
21	0	5	8,25,40,44,26,40	7, 7, 8,54,22,30
6	8	6	8,26,15	7, 6,40
0	3	12	8,28,37,34,41,15	7, 4,40,23,48,28,48
17	4	4	8,32	7, 1,52,30
2	12	5	8,32,34,41,15	7, 1,23,57, 2,13,20
28	0	2	8,37,48,55, 6,40	6,57, 8,13,43,32, 6,33,45
13	8	3	8,38,24	6,56,40
7	3	9	8,40,50	6,54,43,12

From the Otto von Guericke University  
 Magdeburg, Germany  
 Courtesy of The Stanley J. Stein and Sylvia H. Stein Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA



a	b	c	N	N <sup>-1</sup>
24	4	1	8,44,17,16,48	6,51,59,14,17,48,45
9	12	2	8,44,52,48	6,51,31,21,28,53,20
3	7	8	8,47,20,37,30	6,49,36
20	8	0	8,50,50,29,45,36	6,46,54, 3,45
5	16	1	8,51,26,27,36	6,46,26,31,35,11,56, 2,57,46,40
14	3	6	8,53,20	6,45
1	20	0	8,58, 5, 2,26,42	6,41,25,27,29,34,44,59,13,21,38,45,55,;
10	7	5	9	6,40
4	2	11	9, 2,32, 5	6,38, 7,52,19,12
21	3	3	9, 6, 8	6,35,30,28, 7,30
6	11	4	9, 6,45	6,35, 3,42,13,20
0	6	10	9, 9,18,59, 3,45	6,33,12,57,36
17	7	2	9,12,57,36	6,30,37,30
2	15	3	9,13,35, 3,45	6,30,11, 3,55,23,27,24,26,40
11	2	8	9,15,33,20	6,28,48
28	3	0	9,19,14,25,55,12	6,26,14,17, 9,11,57,11,15
13	11	1	9,19,52,19,12	6,25,48, 8,53,20
7	6	7	9,22,30	6,24
1	1	13	9,25, 8,25,12,30	6,22,12,21,25,37,55,12
9	15	0	9,26,52,13,26,24	6,21, 2,22, 6,44,56,17,46,40
18	2	5	9,28,53,20	6,19,41,15
3	10	6	9,29,31,52,30	6,19,15,33,20
14	6	4	9,36	6,15
8	1	10	9,38,42,13,20	6,13,14,52,48
25	2	2	9,42,32,32	6,10,47,18,52, 1,52,30
10	10	3	9,43,12	6,10,22,13,20
4	5	9	9,45,56,15	6, 8,38,24
21	6	1	9,49,49,26,24	6, 6,12,39,22,30
6	14	2	9,50,29,24	6, 5,47,52,25,40,44,26,40
15	1	7	9,52,35,33,20	6, 4,30
0	9	8	9,53,15,42,11,15	6, 4, 5,20
17	10	0	9,57,11,48,28,48	6, 1,41,23,20
2	18	1	9,57,52,16, 3	6, 1,16,54,44,37,16,29,18, 1,28,53,20
11	5	6	10	6
5	0	12	10, 2,48,58,53,20	5,58,19, 5, 5,16,48
22	1	4	10, 6,48,53,20	5,55,57,25,18,45
7	9	5	10, 7,30	5,55,33,20
1	4	11	10,10,21, 5,37,30	5,53,53,39,50,24
18	5	3	10,14,24	5,51,33,45
3	13	4	10,15, 5,37,30	5,51, 9,57,31,51, 6,40

From the Otto Neugebauer papers  
 University of Pennsylvania and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
12	0	9	10, 17, 17, 2, 13, 20	5, 49, 55, 12
29	1	1	10, 21, 22, 42, 8	5, 47, 36, 51, 26, 16, 45, 28, 7, 30
14	9	2	10, 22, 4, 48	5, 47, 13, 20
8	4	8	10, 25	5, 45, 36
25	5	0	10, 29, 8, 44, 9, 36	5, 43, 19, 21, 54, 50, 37, 30
10	13	1	10, 29, 51, 21, 36	5, 42, 56, 7, 54, 4, 26, 40
19	0	6	10, 32, 5, 55, 33, 20	5, 41, 43, 7, 30
4	8	7	10, 32, 48, 45	5, 41, 20
6	17	0	10, 37, 43, 45, 7, 12	5, 38, 42, 6, 19, 19, 56, 42, 28, 8, 53, 20
15	4	5	10, 40	5, 37, 30
0	12	6	10, 40, 43, 21, 33, 45	5, 37, 7, 9, 37, 46, 40
26	0	3	10, 47, 16, 8, 53, 20	5, 33, 42, 34, 58, 49, 41, 15
11	8	4	10, 48	5, 33, 20
5	3	10	10, 51, 2, 30	5, 31, 46, 33, 36
22	4	2	10, 55, 21, 36	5, 29, 35, 23, 26, 15
7	12	3	10, 56, 6	5, 29, 13, 5, 11, 6, 40
1	7	9	10, 59, 10, 46, 52, 30	5, 27, 40, 48
33	0	0	11, 2, 48, 12, 56, 32	5, 25, 53, 18, 13, 23, 12, 37, 37, 1, 52, 30
18	8	1	11, 3, 33, 7, 12	5, 25, 31, 15
3	16	2	11, 4, 18, 4, 30	5, 25, 9, 13, 16, 9, 32, 50, 22, 13, 20
12	3	7	11, 6, 40	5, 24
14	12	0	11, 11, 50, 47, 2, 24	5, 21, 30, 7, 24, 26, 40
8	7	6	11, 15	5, 20
2	2	12	11, 18, 10, 6, 15	5, 18, 30, 17, 51, 21, 36
19	3	4	11, 22, 40	5, 16, 24, 22, 30
4	11	5	11, 23, 26, 15	5, 16, 2, 57, 46, 40
15	7	3	11, 31, 12	5, 12, 30
0	15	4	11, 31, 58, 49, 41, 15	5, 12, 8, 51, 8, 18, 45, 55, 33, 20
9	2	9	11, 34, 26, 40	5, 11, 2, 24
26	3	1	11, 39, 3, 2, 24	5, 8, 59, 25, 43, 21, 33, 45
11	11	2	11, 39, 50, 24	5, 8, 38, 31, 6, 40
5	6	8	11, 43, 7, 30	5, 7, 12
22	7	0	11, 47, 47, 19, 40, 48	5, 5, 10, 32, 48, 45
7	15	1	11, 48, 35, 16, 48	5, 4, 49, 53, 41, 23, 57, 2, 13, 20
16	2	6	11, 51, 6, 40	5, 3, 45
1	10	7	11, 51, 54, 50, 37, 30	5, 3, 24, 26, 40
3	19	0	11, 57, 26, 43, 15, 36	5, 1, 4, 5, 37, 11, 3, 44, 25, 1, 14, 4, 26, 40
12	6	5	12	5
6	1	11	12, 3, 22, 46, 40	4, 58, 35, 54, 14, 24
23	2	3	12, 8, 10, 40	4, 56, 37, 51, 5, 37, 30

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton University

a	b	c	N	N <sup>-1</sup>
8	10	4	12, 9	4, 56, 17, 46, 40
2	5	10	12, 12, 25, 18, 45	4, 54, 54, 43, 12
19	6	2	12, 17, 16, 48	4, 52, 58, 7, 30
4	14	3	12, 18, 6, 45	4, 52, 38, 17, 56, 32, 35, 33, 20
13	1	8	12, 20, 44, 26, 40	4, 51, 36
30	2	0	12, 25, 39, 14, 33, 36	4, 49, 40, 42, 51, 53, 57, 53, 26, 15
15	10	1	12, 26, 29, 45, 36	4, 49, 21, 6, 40
0	18	2	12, 27, 20, 20, 3, 45	4, 49, 1, 31, 47, 41, 49, 11, 26, 25, 11, 6, 40
9	5	7	12, 30	4, 48
3	0	13	12, 33, 31, 13, 36, 40	4, 46, 39, 16, 4, 13, 26, 24
11	14	0	12, 35, 49, 37, 55, 12	4, 45, 46, 46, 35, 3, 42, 13, 20
20	1	5	12, 38, 31, 6, 40	4, 44, 45, 56, 15
5	9	6	12, 39, 22, 30	4, 44, 26, 40
16	5	4	12, 48	4, 41, 15
1	13	5	12, 48, 52, 1, 52, 30	4, 40, 55, 58, 1, 28, 53, 20
10	0	10	12, 51, 36, 17, 46, 40	4, 39, 56, 9, 36
27	1	2	12, 56, 43, 22, 40	4, 38, 5, 29, 9, 1, 24, 22, 30
12	9	3	12, 57, 36	4, 37, 46, 40
6	4	9	13, 1, 15	4, 36, 28, 48
23	5	1	13, 6, 25, 55, 12	4, 34, 39, 29, 31, 52, 30
8	13	2	13, 7, 19, 12	4, 34, 20, 54, 19, 15, 33, 20
17	0	7	13, 10, 7, 24, 26, 40	4, 33, 22, 30
2	8	8	13, 11, 0, 56, 15	4, 33, 4
19	9	0	13, 16, 15, 44, 38, 24	4, 31, 16, 2, 30
4	17	1	13, 17, 9, 41, 24	4, 30, 57, 41, 3, 27, 57, 21, 58, 31, 6, 40
13	4	6	13, 20	4, 30
0	21	0	13, 27, 7, 33, 40, 3	4, 27, 36, 58, 19, 43, 9, 59, 28, 54, 25, 50, 37, 2, 13, 20
24	0	4	13, 29, 5, 11, 6, 40	4, 26, 58, 3, 59, 3, 45
9	8	5	13, 30	4, 26, 40
3	3	11	13, 33, 48, 7, 30	4, 25, 25, 14, 52, 48
20	4	3	13, 39, 12	4, 23, 40, 18, 45
5	12	4	13, 40, 7, 30	4, 23, 22, 28, 8, 53, 20
31	0	1	13, 48, 30, 16, 10, 40	4, 20, 42, 38, 34, 42, 34, 6, 5, 37, 30
16	8	2	13, 49, 26, 24	4, 20, 25
1	16	3	13, 50, 22, 35, 37, 30	4, 20, 7, 22, 36, 55, 38, 16, 17, 46, 40
10	3	8	13, 53, 20	4, 19, 12
27	4	0	13, 58, 51, 38, 52, 48	4, 17, 29, 31, 26, 7, 58, 7, 30
12	12	1	13, 59, 48, 28, 48	4, 17, 12, 5, 55, 33, 20
6	7	7	14, 3, 45	4, 16

a	b	c	N	N <sup>-1</sup>
0	2	13	14, 7, 42, 37, 48, 45	4, 14, 48, 14, 17, 5, 16, 48
8	16	0	14, 10, 18, 20, 9, 36	4, 14, 1, 34, 44, 29, 57, 31, 51, 6, 40
17	3	5	14, 13, 20	4, 13, 7, 30
2	11	6	14, 14, 17, 48, 45	4, 12, 50, 22, 13, 20
13	7	4	14, 24	4, 10
7	2	10	14, 28, 3, 20	4, 8, 49, 55, 12
24	3	2	14, 33, 48, 48	4, 7, 11, 32, 34, 41, 15
9	11	3	14, 34, 48	4, 6, 54, 48, 53, 20
3	6	9	14, 38, 54, 22, 30	4, 5, 45, 36
20	7	1	14, 44, 44, 9, 36	4, 4, 8, 26, 15
5	15	2	14, 45, 44, 6	4, 3, 51, 54, 57, 7, 9, 37, 46, 40
14	2	7	14, 48, 53, 20	4, 3
16	11	0	14, 55, 47, 42, 43, 12	4, 1, 7, 35, 33, 20
1	19	1	14, 56, 48, 24, 4, 30	4, 0, 51, 16, 29, 44, 50, 59, 32, 0, 59, 15, 33, 20
10	6	6	15	4
4	1	12	15, 4, 13, 28, 20	3, 58, 52, 43, 23, 31, 12
21	2	4	15, 10, 13, 20	3, 57, 18, 16, 52, 30
6	10	5	15, 11, 15	3, 57, 2, 13, 20
0	5	11	15, 15, 31, 38, 26, 15	3, 55, 55, 46, 33, 36
17	6	3	15, 21, 36	3, 54, 22, 30
2	14	4	15, 22, 38, 26, 15	3, 54, 6, 38, 21, 14, 4, 26, 40
11	1	9	15, 25, 55, 33, 20	3, 53, 16, 48
28	2	1	15, 32, 4, 3, 12	3, 51, 44, 34, 17, 31, 10, 18, 45
13	10	2	15, 33, 7, 12	3, 51, 28, 53, 20
7	5	8	15, 37, 30	3, 50, 24
1	0	14	15, 41, 54, 2, 0, 50	3, 49, 19, 24, 51, 22, 45, 7, 12
24	6	0	15, 43, 43, 6, 14, 24	3, 48, 52, 54, 36, 33, 45
9	14	1	15, 44, 47, 2, 24	3, 48, 37, 25, 16, 2, 57, 46, 40
18	1	6	15, 48, 8, 53, 20	3, 47, 48, 45
3	9	7	15, 49, 13, 7, 30	3, 47, 33, 20
5	18	0	15, 56, 35, 37, 40, 48	3, 45, 48, 4, 12, 53, 17, 48, 18, 45, 55, 33, 20
14	5	5	16	3, 45
8	0	11	16, 4, 30, 22, 13, 20	3, 43, 56, 55, 40, 48
25	1	3	16, 10, 54, 13, 20	3, 42, 28, 23, 19, 13, 7, 30
10	9	4	16, 12	3, 42, 13, 20
4	4	10	16, 16, 33, 45	3, 41, 11, 2, 24
21	5	2	16, 23, 2, 24	3, 39, 43, 35, 37, 30
6	13	3	16, 24, 9	3, 39, 28, 43, 27, 24, 26, 40
15	0	8	16, 27, 39, 15, 33, 20	3, 38, 42
0	8	9	16, 28, 46, 10, 18, 45	3, 38, 27, 12

From the 20th century papers  
 Courses of Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
32	1	0	16, 34, 12, 19, 24, 48	3, 37, 15, 32, 8, 55, 28, 25, 4, 41, 15
17	9	1	16, 35, 19, 40, 48	3, 37, 0, 50
2	17	2	16, 36, 27, 6, 45	3, 36, 46, 8, 50, 46, 21, 53, 34, 48, 53, 20
11	4	7	16, 40	3, 36
13	13	0	16, 47, 46, 10, 33, 36	3, 34, 20, 4, 56, 17, 46, 40
22	0	5	16, 51, 21, 28, 53, 20	3, 33, 34, 27, 11, 15
7	8	6	16, 52, 30	3, 33, 20
1	3	12	16, 57, 15, 9, 22, 30	3, 32, 20, 11, 54, 14, 24
18	4	4	17, 4	3, 30, 56, 15
3	12	5	17, 5, 9, 22, 30	3, 30, 41, 58, 31, 6, 40
29	0	2	17, 15, 37, 50, 13, 20	3, 28, 34, 6, 51, 46, 3, 16, 52, 30
14	8	3	17, 16, 48	3, 28, 20
8	3	9	17, 21, 40	3, 27, 21, 36
25	4	1	17, 28, 34, 33, 36	3, 25, 59, 37, 8, 54, 22, 30
10	12	2	17, 29, 45, 36	3, 25, 45, 40, 44, 26, 40
4	7	8	17, 34, 41, 15	3, 24, 48
21	8	0	17, 41, 40, 59, 31, 12	3, 23, 27, 1, 52, 30
6	16	1	17, 42, 52, 55, 12	3, 23, 13, 15, 47, 35, 58, 1, 28, 53, 20
15	3	6	17, 46, 40	3, 22, 30
0	11	7	17, 47, 52, 15, 56, 15	3, 22, 16, 17, 46, 40
2	20	0	17, 56, 10, 4, 53, 24	3, 20, 42, 43, 44, 47, 22, 29, 36, 40, 49, 22, 57, 46, 4
11	7	5	18	3, 20
5	2	11	18, 5, 4, 10	3, 19, 3, 56, 9, 36
22	3	3	18, 12, 16	3, 17, 45, 14, 3, 45
7	11	4	18, 13, 30	3, 17, 31, 51, 6, 40
1	6	10	18, 18, 37, 58, 7, 30	3, 16, 36, 28, 48
18	7	2	18, 25, 55, 12	3, 15, 18, 45
3	15	3	18, 27, 10, 7, 30	3, 15, 5, 31, 57, 41, 43, 42, 13, 20
12	2	8	18, 31, 6, 40	3, 14, 24
29	3	0	18, 38, 28, 51, 50, 24	3, 13, 7, 8, 34, 35, 58, 35, 37, 30
14	11	1	18, 39, 44, 38, 24	3, 12, 54, 4, 26, 40
8	6	7	18, 45	3, 12
2	1	13	18, 50, 16, 50, 25	3, 11, 6, 10, 42, 48, 57, 36
10	15	0	18, 53, 44, 26, 52, 48	3, 10, 31, 11, 3, 22, 28, 8, 53, 20
19	2	5	18, 57, 46, 40	3, 9, 50, 37, 30
4	10	6	18, 59, 3, 45	3, 9, 37, 46, 40
15	6	4	19, 12	3, 7, 30
0	14	5	19, 13, 18, 2, 48, 45	3, 7, 17, 18, 40, 59, 15, 33, 20
9	1	10	19, 17, 24, 26, 40	3, 6, 37, 26, 24
26	2	2	19, 25, 5, 4	3, 5, 23, 39, 26, 0, 56, 15

From the C. Neugebauer papers

Courtesy of The Simons Foundation  
 Institute for Advanced Study  
 Princeton, NJ, USA  
 Levy Archives Center

a	b	c	N	N <sup>-1</sup>
11	10	3	19,26,24	3, 5,11, 6,40
5	5	9	19,31,52,30	3, 4,19,12
22	6	1	19,39,38,52,48	3, 3, 6,19,41,15
7	14	2	19,40,58,48	3, 2,53,56,12,50,22,13,20
16	1	7	19,45,11, 6,40	3, 2,15
1	9	8	19,46,31,24,22,30	3, 2, 2,40
18	10	0	19,54,23,36,57,36	3, 0,50,41,40
3	18	1	19,55,44,32, 6	3, 0,38,27,22,18,38,14,39, 0,44,26,40
12	5	6	20	3
6	0	12	20, 5,37,57,46,40	2,59, 9,32,32,38,24
23	1	4	20,13,37,46,40	2,57,58,42,39,22,30
8	9	5	20,15	2,57,46,40
2	4	11	20,20,42,11,15	2,56,56,49,55,12
19	5	3	20,28,48	2,55,46,52,30
4	13	4	20,30,11,15	2,55,34,58,45,55,33,20
13	0	9	20,34,34, 4,26,40	2,54,57,36
30	1	1	20,42,45,24,16	2,53,48,25,43, 8,22,44, 3,45
15	9	2	20,44, 9,36	2,53,36,40
0	17	3	20,45,33,53,26,15	2,53,24,55, 4,37, 5,30,51,51, 6,40
9	4	8	20,50	2,52,48
26	3	0	20,58,17,28,19,12	2,51,39,40,57,25,18,45
11	13	1	20,59,42,43,12	2,51,28, 3,57, 2,13,20
20	0	6	21, 4,11,51, 6,40	2,50,51,33,45
5	8	7	21, 5,37,30	2,50,40
7	17	0	21,15,27,30,14,24	2,49,21, 3, 9,39,58,21,14, 4,26,40
16	4	5	21,20	2,48,45
1	12	6	21,21,26,43, 7,30	2,48,33,34,48,53,20
27	0	3	21,34,32,17,46,40	2,46,51,17,29,24,50,37,30
12	8	4	21,36	2,46,40
6	3	10	21,42, 5	2,45,53,16,48
23	4	2	21,50,43,12	2,44,47,41,43, 7,30
8	12	3	21,52,12	2,44,36,32,35,33,20
2	7	9	21,58,21,33,45	2,43,50,24
34	0	0	22, 5,36,25,53, 4	2,42,56,39, 6,41,36,18,48,30,56,15
19	8	1	22, 7, 6,14,24	2,42,45,37,30
4	16	2	22, 8,36, 9	2,42,34,36,38, 4,46,25,11, 6,40
13	3	7	22,13,20	2,42
15	12	0	22,23,41,34, 4,48	2,40,45, 3,42,13,20
0	20	1	22,25,12,36, 6,45	2,40,34,10,59,49,53,59,41,20,39,30,22,13,20
9	7	6	22,30	2,40

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton NJ USA

a	b	c	N	N <sup>-1</sup>
3	2	12	22,36,20,12,30	2,39,15, 8,55,40,48
20	3	4	22,45,20	2,38,12,11,15
5	11	5	22,46,52,30	2,38, 1,28,53,20
16	7	3	23, 2,24	2,36,15
1	15	4	23, 3,57,39,22,30	2,36, 4,25,34, 9,22,57,46,40
10	2	9	23, 8,53,20	2,35,31,12
27	3	1	23,18, 6, 4,48	2,34,29,42,51,40,46,52,30
12	11	2	23,19,40,48	2,34,19,15,33,20
6	6	8	23,26,15	2,33,36
0	1	14	23,32,51, 3, 1,15	2,32,52,56,34,15,10, 4,48
23	7	0	23,35,34,39,21,36	2,32,35,16,24,22,30
8	15	1	23,37,10,33,36	2,32,24,56,50,41,58,31, 6,40
17	2	6	23,42,13,20	2,31,52,30
2	10	7	23,43,49,41,15	2,31,42,13,20
4	19	0	23,54,53,26,31,12	2,30,32, 2,48,35,31,52,12,30,37, 2,13,20
13	6	5	24	2,30
7	1	11	24, 6,45,33,20	2,29,17,57, 7,12
24	2	3	24,16,21,20	2,28,18,55,32,48,45
9	10	4	24,18	2,28, 8,53,20
3	5	10	24,24,50,37,30	2,27,27,21,36
20	6	2	24,34,33,36	2,26,29, 3,45
5	14	3	24,36,13,30	2,26,19, 8,58,16,17,46,40
14	1	8	24,41,28,53,20	2,25,48
31	2	0	24,51,18,29, 7,12	2,24,50,21,25,56,58,56,43, 7,30
16	10	1	24,52,59,31,12	2,24,40,33,20
1	18	2	24,54,40,40, 7,30	2,24,30,45,53,50,54,35,43,12,35,33,20
10	5	7	25	2,24
4	0	13	25, 7, 2,27,13,20	2,23,19,38, 2, 6,43,12
12	14	0	25,11,39,15,50,24	2,22,53,23,17,31,51, 6,40
21	1	5	25,17, 2,13,20	2,22,22,58, 7,30
6	9	6	25,18,45	2,22,13,20
0	4	12	25,25,52,44, 3,45	2,21,33,27,56, 9,36
17	5	4	25,36	2,20,37,30
2	13	5	25,37,44, 3,45	2,20,27,59, 0,44,26,40
11	0	10	25,43,12,35,33,20	2,19,58, 4,48
28	1	2	25,53,26,45,20	2,19, 2,44,34,30,42,11,15
13	9	3	25,55,12	2,18,53,20
7	4	9	26, 2,30	2,18,14,24
24	5	1	26,12,51,50,24	2,17,19,44,45,56,15
9	13	2	26,14,38,24	2,17,10,27, 9,37,46,40

a	b	c	N	N <sup>-1</sup>
18	0	7	26,20,14,48,53,20	2,16,41,15
3	8	8	26,22,1,52,30	2,16,32
20	9	0	26,32,31,29,16,48	2,15,38,1,15
5	17	1	26,34,19,22,48	2,15,28,50,31,43,58,40,59,15,33,20
14	4	6	26,40	2,15
1	21	0	26,54,15,7,20,6	2,13,48,29,9,51,34,59,44,27,12,55,18,31,6,40
25	0	4	26,58,10,22,13,20	2,13,29,1,59,31,52,30
10	8	5	27	2,13,20
4	3	11	27,7,36,15	2,12,42,37,26,24
21	4	3	27,18,24	2,11,50,9,22,30
6	12	4	27,20,15	2,11,41,14,4,26,40
0	7	10	27,27,56,57,11,15	2,11,4,19,12
32	0	1	27,37,0,32,21,20	2,10,27,19,17,21,17,3,2,48,45
17	8	2	27,38,52,48	2,10,12,30
2	16	3	27,40,45,11,15	2,10,3,41,18,27,49,8,8,53,20
11	3	8	27,46,40	2,9,36
28	4	0	27,57,43,17,45,36	2,8,44,45,43,3,59,3,45
13	12	1	27,59,36,57,36	2,8,36,2,57,46,40
7	7	7	28,7,30	2,8
1	2	13	28,15,25,15,37,30	2,7,24,7,8,32,38,24
9	16	0	28,20,36,40,19,12	2,7,0,47,22,14,58,45,55,33,20
18	3	5	28,26,40	2,6,33,45
3	11	6	28,28,35,37,30	2,6,25,11,6,40
14	7	4	28,48	2,5
8	2	10	28,56,6,40	2,4,24,57,36
25	3	2	29,7,37,36	2,3,35,46,17,20,37,30
10	11	3	29,9,36	2,3,27,24,26,40
4	6	9	29,17,48,45	2,2,52,48
21	7	1	29,29,28,19,12	2,2,4,13,7,30
6	15	2	29,31,28,12	2,1,55,57,28,33,34,48,53,20
15	2	7	29,37,46,40	2,1,30
0	10	8	29,39,47,6,33,45	2,1,21,46,40
17	11	0	29,51,35,25,26,24	2,0,33,47,46,40
2	19	1	29,53,36,48,9	2,0,25,38,14,52,25,29,46,0,29,37,46,40
11	6	6	30	2
5	1	12	30,8,26,56,40	1,59,26,21,41,45,36
22	2	4	30,20,26,40	1,58,39,8,26,15
7	10	5	30,22,30	1,58,31,6,40
1	5	11	30,31,3,16,52,30	1,57,57,53,16,48

From the Otto Neugebauer papers  
 Courtesy of the Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton University



a	b	c	N	N <sup>-1</sup>
18	6	3	30,43,12	1,57,11,15
3	14	4	30,45,16,52,30	1,57, 3,19,10,37, 2,13,20
12	1	9	30,51,51, 6,40	1,56,38,24
29	2	1	31, 4, 8, 6,24	1,55,52,17, 8,45,35, 9,22,30
14	10	2	31, 6,14,24	1,55,44,26,40
8	5	8	31,15	1,55,12
2	0	14	31,23,48, 4, 1,40	1,54,39,42,25,41,22,33,36
25	6	0	31,27,26,12,28,48	1,54,26,27,18,16,52,30
10	14	1	31,29,34, 4,48	1,54,18,42,38, 1,28,53,20
19	1	6	31,36,17,46,40	1,53,54,22,30
4	9	7	31,38,26,15	1,53,46,40
6	18	0	31,53,11,15,21,36	1,52,54, 2, 6,26,38,54, 9,22,57,46,40
15	5	5	32	1,52,30
0	13	6	32, 2,10, 4,41,15	1,52,22,23,12,35,33,20
9	0	11	32, 9, 0,44,26,40	1,51,58,27,50,24
26	1	3	32,21,48,26,40	1,51,14,11,39,36,33,45
11	9	4	32,24	1,51, 6,40
5	4	10	32,33, 7,30	1,50,35,31,12
22	5	2	32,46, 4,48	1,49,51,47,48,45
7	13	3	32,48,18	1,49,44,21,43,42,13,20
16	0	8	32,55,18,31, 6,40	1,49,21
1	8	9	32,57,32,20,37,30	1,49,13,36
33	1	0	33, 8,24,38,49,36	1,48,37,46, 4,27,44,12,32,20,37,30
18	9	1	33,10,39,21,36	1,48,30,25
3	17	2	33,12,54,13,30	1,48,23, 4,25,23,10,56,47,24,26,40
12	4	7	33,20	1,48
14	13	0	33,35,32,21, 7,12	1,47,10, 2,28, 8,53,20
23	0	5	33,42,42,57,46,40	1,46,47,13,35,37,30
8	8	6	33,45	1,46,40
2	3	12	33,54,30,18,45	1,46,10, 5,57, 7,12
19	4	4	34, 8	1,45,28, 7,30
4	12	5	34,10,18,45	1,45,20,59,15,33,20
30	0	2	34,31,15,40,26,40	1,44,17, 3,25,53, 1,38,26,15
15	8	3	34,33,36	1,44,10
0	16	4	34,35,56,29, 3,45	1,44, 2,57, 2,46,15,18,31, 6,40
9	3	9	34,43,20	1,43,40,48
26	4	1	34,57, 9, 7,12	1,42,59,48,34,27,11,15
11	12	2	34,59,31,12	1,42,52,50,22,13,20
5	7	8	35, 9,22,30	1,42,24
22	8	0	35,23,21,59, 2,24	1,41,43,30,56,15

From the Otto Neugebauer papers  
 Courtesy of Emily White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
7	16	1	35,25,45,50,24	1,41,36,37,53,47,59, 0,44,26,40
16	3	6	35,33,20	1,41,15
1	11	7	35,35,44,31,52,30	1,41, 8, 8,53,20
3	20	0	35,52,20, 9,46,48	1,40,21,21,52,23,41,14,48,20,24,41,28,53,
12	7	5	36	1,40
6	2	11	36,10, 8,20	1,39,31,58, 4,48
23	3	3	36,24,32	1,38,52,37, 1,52,30
8	11	4	36,27	1,38,45,55,33,20
2	6	10	36,37,15,56,15	1,38,18,14,24
19	7	2	36,51,50,24	1,37,39,22,30
4	15	3	36,54,20,15	1,37,32,45,58,50,51,51, 6,40
13	2	8	37, 2,13,20	1,37,12
30	3	0	37, 16,57,43,40,48	1,36,33,34,17,17,59,17,48,45
15	11	1	37,19,29,16,48	1,36,27, 2,13,20
0	19	2	37,22, 1, 0,11,15	1,36,20,30,35,53,56,23,48,48,23,42,13,20
9	6	7	37,30	1,36
3	1	13	37,40,33,40,50	1,35,33, 5,21,24,28,48
11	15	0	37,47,28,53,45,36	1,35,15,35,31,41,14, 4,26,40
20	2	5	37,55,33,20	1,34,55,18,45
5	10	6	37,58, 7,30	1,34,48,53,20
16	6	4	38,24	1,33,45
1	14	5	38,26,36, 5,37,30	1,33,38,39,20,29,37,46,40
10	1	10	38,34,48,53,20	1,33,18,43,12
27	2	2	38,50,10, 8	1,32,41,49,43, 0,28, 7,30
12	10	3	38,52,48	1,32,35,33,20
6	5	9	39, 3,45	1,32, 9,36
0	0	15	39,14,45, 5, 2, 5	1,31,43,45,56,33, 6, 2,52,48
23	6	1	39,19,17,45,36	1,31,33, 9,50,37,30
8	14	2	39,21,57,36	1,31,26,58, 6,25,11, 6,40
17	1	7	39,30,22,13,20	1,31, 7,30
2	9	8	39,33, 2,48,45	1,31, 1,20
19	10	0	39,48,47,13,55,12	1,30,25,20,50
4	18	1	39,51,29, 4,12	1,30,19,13,41, 9,19, 7,19,30,22,13,20
13	5	6	40	1,30
7	0	12	40,11,15,55,33,20	1,29,34,46,16,19,12
0	0	22	40,21,22,41, 0, 9	1,29,12,19,26,34,23,19,49,38, 8,36,52,20, 44,26,40
24	1	4	40,27,15,33,20	1,28,59,21,19,41,15
9	9	5	40,30	1,28,53,20
3	4	11	40,41,24,22,30	1,28,28,24,57,36

From the Otto Neugebauer papers

Courtesy of the Otto Neugebauer Papers, Leon Levy Archives Center

Institute for Advanced Study

Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
20	5	3	40,57,36	1,27,53,26,15
5	13	4	41, 0,22,30	1,27,47,29,22,57,46,40
14	0	9	41, 9, 8, 8,53,20	1,27,28,48
31	1	1	41,25,30,48,32	1,26,54,12,51,34,11,22, 1,52,30
16	9	2	41,28,19,12	1,26,48,20
1	17	3	41,31, 7,46,52,30	1,26,42,27,32,18,32,45,25,55,33,20
10	4	8	41,40	1,26,24
27	5	0	41,56,34,56,38,24	1,25,49,50,28,42,39,22,30
12	13	1	41,59,25,26,24	1,25,44, 1,58,31 6,40
21	0	6	42, 8,23,42,13,20	1,25,25,46,52,30
6	8	7	42,11,15	1,25,20
0	3	13	42,23, 7,53,26,15	1,24,56, 4,45,41,45,36
8	17	0	42,30,55, 0,28,48	1,24,40,31,34,49,59,10,37, 2,13,20
17	4	5	42,40	1,24,22,30
2	12	6	42,42,53,26,15	1,24,16,47,24,26,40
28	0	3	43, 9, 4,35,33,20	1,23,25,38,44,42,25,18,45
13	8	4	43,12	1,23,20
7	3	10	43,24,10	1,22,56,38,24
24	4	2	43,41,26,24	1,22,23,50,51,33,45
9	12	3	43,44,24	1,22,18,16,17,46,40
3	7	9	43,56,43, 7,30	1,21,55,12
35	0	0	44,11,12,51,46, 8	1,21,28,19,33,20,48, 9,24,15,28, 7,30
20	8	1	44,14,12,28,48	1,21,22,48,45
5	16	2	44,17,12,18	1,21,17,18,19, 2,23,12,35,33,20
14	3	7	44,26,40	1,21
16	12	0	44,47,23, 8, 9,36	1,20,22,31,51, 6,40
1	20	1	44,50,25,12,13,30	1,20,17, 5,29,54,56,59,50,40,19,45,11, 6
10	7	6	45	1,20
4	2	12	45,12,40,25	1,19,37,34,27,50,24
21	3	4	45,30,40	1,19, 6, 5,37,30
6	11	5	45,33,45	1,19, 0,44,26,40
0	6	11	45,46,34,55,18,45	1,18,38,35,31,12
17	7	3	46, 4,48	1,18, 7,30
2	15	4	46, 7,55,18,45	1,18, 2,12,47, 4,41,28,53,20
11	2	9	46,17,46,40	1,17,45,36
28	3	1	46,36,12, 9,36	1,17,14,51,25,50,23,26,15
13	11	2	46,39,21,36	1,17, 9,37,46,40
7	6	8	46,52,30	1,16,48
1	1	14	47, 5,42, 6, 2,30	1,16,26,28,17, 7,35, 2,24
24	7	0	47,11, 9,18,43,12	1,16,17,38,12,11,15

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ

a	b	c	N	N <sup>-1</sup>	6c
9	15	1	47, 14, 21, 7, 12	1, 16, 12, 28, 25, 20, 59, 15, 33, 20	
18	2	6	47, 24, 26, 40	1, 15, 56, 15	
3	10	7	47, 27, 39, 22, 30	1, 15, 51, 6, 40	
5	19	0	47, 49, 46, 53, 2, 24	1, 15, 16, 1, 24, 17, 45, 56, 6, 15, 18, 31, 6, 40	
14	6	5	48	1, 15	
8	1	11	48, 13, 31, 6, 40	1, 14, 38, 58, 33, 36	
25	2	3	48, 32, 42, 40	1, 14, 9, 27, 46, 24, 22, 30	
10	10	4	48, 36	1, 14, 4, 26, 40	
4	5	10	48, 49, 41, 15	1, 13, 43, 40, 48	
21	6	2	49, 9, 7, 12	1, 13, 14, 31, 52, 30	
6	14	3	49, 12, 27	1, 13, 9, 34, 29, 8, 8, 53, 20	
15	1	8	49, 22, 57, 46, 40	1, 12, 54	
0	9	9	49, 26, 18, 30, 56, 15	1, 12, 49, 4	
32	2	0	49, 42, 36, 58, 14, 24	1, 12, 25, 10, 42, 58, 29, 28, 21, 33, 45	
17	10	1	49, 45, 59, 2, 24	1, 12, 20, 16, 40	
2	18	2	49, 49, 21, 20, 15	1, 12, 15, 22, 56, 55, 27, 17, 51, 36, 17, 46, 40	
11	5	7	50	1, 12	
5	0	13	50, 14, 4, 54, 26, 40	1, 11, 39, 49, 1, 3, 21, 36	
13	14	0	50, 23, 18, 31, 40, 48	1, 11, 26, 41, 38, 45, 55, 33, 20	
22	1	5	50, 34, 4, 26, 40	1, 11, 11, 29, 3, 45	
7	9	6	50, 37, 30	1, 11, 6, 40	
1	4	12	50, 51, 45, 28, 7, 30	1, 10, 46, 43, 58, 4, 48	
18	5	4	51, 12	1, 10, 18, 45	
3	13	5	51, 15, 28, 7, 30	1, 10, 13, 59, 30, 22, 13, 20	
12	0	10	51, 26, 25, 11, 6, 40	1, 9, 59, 2, 24	
29	1	2	51, 46, 53, 30, 40	1, 9, 31, 22, 17, 15, 21, 5, 37, 30	
14	9	3	51, 50, 24	1, 9, 26, 40	
8	4	9	52, 5	1, 9, 7, 12	
25	5	1	52, 25, 43, 40, 48	1, 8, 39, 52, 22, 58, 7, 30	
10	13	2	52, 29, 16, 48	1, 8, 35, 13, 34, 48, 53, 20	
19	0	7	52, 40, 29, 37, 46, 40	1, 8, 20, 37, 30	
4	8	8	52, 44, 3, 45	1, 8, 16	
21	9	0	53, 5, 2, 58, 33, 36	1, 7, 49, 0, 37, 30	
6	17	1	53, 8, 38, 45, 36	1, 7, 44, 25, 15, 51, 59, 20, 29, 37, 46, 40	
15	4	6	53, 20	1, 7, 30	
0	12	7	53, 23, 36, 47, 48, 45	1, 7, 25, 25, 55, 33, 20	
2	21	0	53, 48, 30, 14, 40, 12	1, 6, 54, 14, 34, 55, 47, 29, 52, 13, 36, 27, 39, 1	
26	0	4	53, 56, 20, 44, 26, 40	1, 6, 44, 30, 59, 45, 56, 15	33, 21
11	8	5	54	1, 6, 40	

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
5	3	11	54, 15, 12, 30	1, 6, 21, 18, 43, 12
22	4	3	54, 36, 48	1, 5, 55, 4, 41, 15
7	12	4	54, 40, 30	1, 5, 50, 37, 2, 13, 20
1	7	10	54, 55, 53, 54, 22, 30	1, 5, 32, 9, 36
33	0	1	55, 14, 1, 4, 42, 40	1, 5, 10, 39, 38, 40, 38, 31, 31, 24, 22, 30
18	8	2	55, 17, 45, 36	1, 5, 6, 15
3	16	3	55, 21, 30, 22, 30	1, 5, 1, 50, 39, 13, 54, 34, 4, 26, 40
12	3	8	55, 33, 20	1, 4, 48
29	4	0	55, 55, 26, 35, 31, 12	1, 4, 22, 22, 51, 31, 59, 31, 52, 30
14	12	1	55, 59, 13, 55, 12	1, 4, 18, 1, 28, 53, 20
8	7	7	56, 15	1, 4
2	2	13	56, 30, 50, 31, 15	1, 3, 42, 3, 34, 16, 19, 12
10	16	0	56, 41, 13, 20, 38, 24	1, 3, 30, 23, 41, 7, 29, 22, 57, 46, 40
19	3	5	56, 53, 20	1, 3, 16, 52, 30
4	11	6	56, 57, 11, 15	1, 3, 12, 35, 33, 20
15	7	4	57, 36	1, 2, 30
0	15	5	57, 39, 54, 8, 26, 15	1, 2, 25, 46, 13, 39, 45, 11, 6, 40
9	2	10	57, 52, 13, 20	1, 2, 12, 28, 48
26	3	2	58, 15, 15, 12	1, 1, 47, 53, 8, 40, 18, 45
11	11	3	58, 19, 12	1, 1, 43, 42, 13, 20
5	6	9	58, 35, 37, 30	1, 1, 26, 24
22	7	1	58, 58, 56, 38, 24	1, 1, 2, 6, 33, 45
7	15	2	59, 2, 56, 24	1, 0, 57, 58, 44, 16, 47, 24, 26, 40
16	2	7	59, 15, 33, 20	1, 0, 45
1	10	8	59, 19, 34, 13, 7, 30	1, 0, 40, 53, 20
18	11	0	59, 43, 10, 50, 52, 48	1, 0, 16, 53, 53, 20
3	19	1	59, 47, 13, 36, 18	1, 0, 12, 49, 7, 26, 12, 44, 53, 0, 14, 48, 53,

VI. Ordnung.

a.	b	c	N	N-1
12	6	6	1	1
6	1	12	1, 0, 16, 53, 53, 20	59, 43, 10, 50, 52, 48
23	2	4	1, 0, 40, 53, 20	59, 19, 34, 13, 7, 30
8	10	5	1, 0, 45	59, 15, 33, 20
2	5	11	1, 1, 2, 6, 33, 45	58, 58, 56, 38, 24
19	6	3	1, 1, 26, 24	58, 35, 37, 30
4	14	4	1, 1, 30, 33, 45	58, 31, 39, 35, 18, 31, 6, 40
13	1	9	1, 1, 43, 42, 13, 20	58, 19, 12
30	2	1	1, 2, 8, 16, 12, 48	57, 56, 8, 34, 22, 47, 34, 41, 15
15	10	2	1, 2, 12, 28, 48	57, 52, 13, 20
0	18	3	1, 2, 16, 41, 40, 18, 45	57, 48, 18, 21, 32, 21, 50, 17, 17, 2, 13, 20
9	5	8	1, 2, 30	57, 36
3	0	14	1, 2, 47, 36, 8, 3, 20	57, 19, 51, 12, 50, 41, 16, 48
26	6	0	1, 2, 54, 52, 24, 57, 36	57, 13, 13, 39, 8, 26, 15
11	14	1	1, 2, 59, 8, 9, 36	57, 9, 21, 19, 0, 44, 26, 40
20	1	6	1, 3, 12, 35, 33, 20	56, 57, 11, 15
5	9	7	1, 3, 16, 52, 30	56, 53, 20
7	18	0	1, 3, 46, 22, 30, 43, 12	56, 27, 1, 3, 13, 19, 27, 4, 41, 28, 53, 20
16	5	5	1, 4	56, 15
1	13	6	1, 4, 4, 20 9, 22, 30	56, 11, 11, 36, 17, 46, 40
10	0	11	1, 4, 18, 1, 28, 53, 20	55, 59, 13, 55, 12
27	1	3	1, 4, 43, 36, 53, 20	55, 37, 5, 49, 48, 16, 52, 30
12	9	4	1, 4, 48	55, 33, 20
6	4	10	1, 5, 6, 15	55, 17, 45, 36
23	5	2	1, 5, 32, 9, 36	54, 55, 53, 54, 22, 30
8	13	3	1, 5, 36, 36	54, 52, 10, 51, 51, 6, 40
17	0	8	1, 5, 50, 37, 2, 13, 20	54, 40, 30
2	8	9	1, 5, 55, 4, 41, 15	54, 36, 48
34	1	0	1, 6, 16, 49, 17, 39, 12	54, 18, 53, 2, 13, 52, 6, 16, 10, 18, 45
19	9	1	1, 6, 21, 18, 43, 12	54, 15, 12, 30
4	17	2	1, 6, 25, 48, 27	54, 11, 32, 12, 41, 35, 28, 23, 42, 13, 20
13	4	7	1, 6, 40	54
15	13	0	1, 7, 11, 4, 42, 14, 24	53, 35, 1, 14, 4, 26, 40
0	21	1	1, 7, 15, 37, 48, 20, 15	53, 31, 23, 39, 56, 37, 59, 53, 46, 53, 10, 7, 24, 26, 40
24	0	5	1, 7, 25, 25, 55, 33, 20	53, 23, 36, 47, 48, 45
9	8	6	1, 7, 30	53, 20

the Copyright Clearance Center  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
3	3	12	1, 7, 49, 0, 37, 30	53, 5, 2, 58, 33, 36
20	4	4	1, 8, 16	52, 44, 3, 45
5	12	5	1, 8, 20, 37, 30	52, 40, 29, 37, 46, 40
31	0	2	1, 9, 2, 31, 20, 53, 20	52, 8, 31, 42, 56, 30, 49, 13, 7, 30
16	8	3	1, 9, 7, 12	52, 5
1	16	4	1, 9, 11, 52, 58, 7, 30	52, 1, 28, 31, 23, 7, 39, 15, 33, 20
10	3	9	1, 9, 26, 40	51, 50, 24
27	4	1	1, 9, 54, 18, 14, 24	51, 29, 54, 17, 13, 35, 37, 30
12	12	2	1, 9, 59, 2, 24	51, 26, 25, 11, 6, 40
6	7	8	1, 10, 18, 45	51, 12
0	2	14	1, 10, 38, 33, 9, 3, 45	50, 57, 38, 51, 25, 3, 21, 36
23	8	0	1, 10, 46, 43, 58, 4, 48	50, 51, 45, 28, 7, 30
8	16	1	1, 10, 51, 31, 40, 48	50, 48, 18, 56, 53, 59, 30, 22, 13, 20
17	3	6	1, 11, 6, 40	50, 37, 30
2	11	7	1, 11, 11, 29, 3, 45	50, 34, 4, 26, 40
4	20	0	1, 11, 44, 40, 19, 33, 36	50, 10, 40, 56, 11, 50, 37, 24, 10, 12, 20, 44, 2
13	7	5	1, 12	50
7	2	11	1, 12, 20, 16, 40	49, 45, 59, 2, 24
24	3	3	1, 12, 49, 4	49, 26, 18, 30, 56, 15
9	11	4	1, 12, 54	49, 22, 57, 46, 40
3	6	10	1, 13, 14, 31, 52, 30	49, 9, 7, 12
20	7	2	1, 13, 43, 40, 48	48, 49, 41, 15
5	15	3	1, 13, 48, 40, 30	48, 46, 22, 59, 25, 25, 55, 33, 20
14	2	8	1, 14, 4, 26, 40	48, 36
31	3	0	1, 14, 33, 55, 27, 21, 36	48, 16, 47, 8, 38, 59, 38, 54, 22, 30
16	11	1	1, 14, 38, 58, 33, 36	48, 13, 31, 6, 40
1	19	2	1, 14, 44, 2, 0, 22, 30	48, 10, 15, 17, 56, 58, 11, 54, 24, 11, 51, 6, 4
10	6	7	1, 15	48
4	1	13	1, 15, 21, 7, 21, 40	47, 46, 32, 40, 42, 14, 24
12	15	0	1, 15, 34, 57, 47, 31, 12	47, 37, 47, 45, 50, 37, 2, 13, 20
21	2	5	1, 15, 51, 6, 40	47, 27, 39, 22, 30
6	10	6	1, 15, 56, 15	47, 24, 26, 40
0	5	12	1, 16, 17, 38, 12, 11, 15	47, 11, 9, 18, 43, 12
17	6	4	1, 16, 48	46, 52, 30
2	14	5	1, 16, 53, 12, 11, 15	46, 49, 19, 40, 14, 48, 53, 20
11	1	10	1, 17, 9, 37, 46, 40	46, 39, 21, 36
28	2	2	1, 17, 40, 20, 16	46, 20, 54, 51, 30, 14, 3, 45
13	10	3	1, 17, 45, 36	46, 17, 46, 40
7	5	9	1, 18, 7, 30	46, 4, 48
1	0	15	1, 18, 29, 30, 10, 4, 10	45, 51, 52, 58, 16, 33, 1, 26, 24

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, New Jersey

a	b	c	N	N <sup>-1</sup>
24	6	1	1, 18, 38, 35, 31, 12	45, 46, 34, 55, 18, 45
9	14	2	1, 18, 43, 55, 12	45, 43, 29, 3, 12, 35, 33, 20
18	1	7	1, 19, 0, 44, 26, 40	45, 33, 45
3	9	8	1, 19, 6, 5, 37, 30	45, 30, 40
20	10	0	1, 19, 37, 34, 27, 50, 24	45, 12, 40, 25
5	18	1	1, 19, 42, 58, 8, 24	45, 9, 36, 50, 34, 39, 33, 39, 45, 11, 6, 40
14	5	6	1, 20	45
8	0	12	1, 20, 22, 31, 51, 6, 40	44, 47, 23, 8, 9, 36
1	22	0	1, 20, 42, 45, 22, 0, 18	44, 36, 9, 43, 17, 11, 39, 54, 49, 4, 18, 26, 10, 22, 13, 20
25	1	4	1, 20, 54, 31, 6, 40	44, 29, 40, 39, 50, 37, 30
10	9	5	1, 21	44, 26, 40
4	4	11	1, 21, 22, 48, 45	44, 14, 12, 28, 48
21	5	3	1, 21, 55, 12	43, 56, 43, 7, 30
6	13	4	1, 22, 0, 45	43, 53, 44, 41, 28, 53, 20
15	0	9	1, 22, 18, 16, 17, 46, 40	43, 44, 24
0	8	10	1, 22, 23, 50, 51, 33, 45	43, 41, 26, 24
32	1	1	1, 22, 51, 1, 37, 4	43, 27, 6, 25, 47, 5, 41, 0, 56, 15
17	9	2	1, 22, 56, 38, 24,	43, 24, 10
2	17	3	1, 23, 2, 15, 33, 45	43, 21, 13, 46, 9, 16, 22, 42, 57, 46, 40
11	4	8	1, 23, 20	43, 12
28	5	0	1, 23, 53, 9, 53, 16, 48	42, 54, 55, 14, 21, 19, 41, 15
13	13	1	1, 23, 58, 50, 52, 48	42, 52, 0, 59, 15, 33, 20
22	0	6	1, 24, 16, 47, 24, 26, 40	42, 42, 53, 26, 15
7	8	7	1, 24, 22, 30	42, 40
1	3	13	1, 24, 46, 15, 46, 52, 30	42, 28, 2, 22, 50, 52, 48
9	17	0	1, 25, 1, 50, 0, 57, 36	42, 20, 15, 47, 24, 59, 35, 18, 31, 6, 40
18	4	5	1, 25, 20	42, 11, 15
3	12	6	1, 25, 25, 46, 52, 30	42, 8, 23, 42, 13, 20
29	0	3	1, 26, 18, 9, 11, 6, 40	41, 42, 49, 22, 21, 12, 39, 22, 30
14	8	4	1, 26, 24	41, 40
8	3	10	1, 26, 48, 20	41, 28, 19, 12
25	4	2	1, 27, 22, 52, 48	41, 11, 55, 25, 46, 52, 30
10	12	3	1, 27, 28, 48	41, 9, 8, 8, 53, 20
4	7	9	1, 27, 53, 26, 15	40, 57, 36
36	0	0	1, 28, 22, 25, 43, 32, 16	40, 44, 9, 46, 40, 24, 4, 42, 7, 44, 3, 45
21	8	1	1, 28, 28, 24, 57, 36	40, 41, 24, 22, 30
6	16	2	1, 28, 34, 24, 36	40, 38, 39, 9, 31, 11, 36, 17, 46, 40
15	3	7	1, 28, 53, 20	40, 30
0	11	8	1, 28, 59, 21, 19, 41, 15	40, 27, 15, 33, 20

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, N.J.



a	b	c	N	N <sup>-1</sup>
17	12	0	1,29,34,46,16,19,12	40,11,15,55,33,20
2	20	1	1,29,40,50,24,27	40, 8,32,44,57,28,29,55,20, 9,52,35,3
11	7	6	1,30	40
5	2	12	1,30,25,20,50	39,48,47,13,55,12
22	3	4	1,31, 1,20	39,33, 2,48,45
7	11	5	1,31, 7,30	39,30,22,13,20
1	6	11	1,31,33, 9,50,37,30	39,19,17,45,36
18	7	3	1,32, 9,36	39, 3,45
3	15	4	1,32,15,50,37,30	39, 1, 6,23,32,20,44,26,40
12	2	9	1,32,35,33,20	38,52,48
29	3	1	1,33,12,24,19,12	38,37,25,42,55,11,43, 7,30
14	11	2	1,33,18,43,12	38,34,48,53,20
8	6	8	1,33,45	38,24
2	1	14	1,34,11,24,12, 5	38,13,14, 8,33,47,31,12
25	7	0	1,34,22,18,37,26,24	38, 8,49, 6, 5,37,30
10	15	1	1,34,28,42,14,24	38, 6,14,12,40,29,37,46,40
19	2	6	1,34,48,53,20	37,58, 7,30
4	10	7	1,34,55,48,45	37,55,33,20
6	19	0	1,35,39,33,46, 4,48	37,38, 0,42, 8,52,58, 3, 7,39,15,33,2
15	6	5	1,36	37,30
0	14	6	1,36, 6,30,14, 3,45	37,27,27,44,11,51, 6,40
9	1	11	1,36,27, 2,13,20	37,19,29,16,48
26	2	3	1,37, 5,25,20	37, 4,43,53,12,11,15
11	10	4	1,37,12	37, 2,13,20
5	5	10	1,37,39,22,30	36,51,50,24
22	6	2	1,38,18,14,24	36,37,15,56,15
7	14	3	1,38,24,54	36,34,47,14,34, 4,26,40
16	1	8	1,38,45,55,33,20	36,27
1	9	9	1,38,52,37, 1,52,30	36,24,32
33	2	0	1,39,25,13,56,28,48	36,12,35,21,29,14,44,10,46,52,30
18	10	1	1,39,31,58, 4,48	36,10, 8,20
3	18	2	1,39,38,42,40,30	36, 7,41,28,27,43,38,55,48, 8,53,20
12	5	7	1,40	36
6	0	15	1,40,28, 9,48,53,20	35,49,54,30,31,40,48
14	14	0	1,40,46,37, 3,21,36	35,43,20,49,22,57,46,40
23	1	5	1,41, 8, 8,53,20	35,35,44,31,52,30
8	9	6	1,41,15	35,33,20
2	4	12	1,41,43,30,56,15	35,23,21,59, 2,24
19	5	4	1,42,24	35, 9,22,30
4	13	5	1,42,30,56,15	35, 6,59,45,11, 6,40

From the Otto Neugebauer papers  
 Property of The University of Toronto  
 Institute for Advanced Study  
 Princeton, NJ, USA  
 Leon Levy Archives Center

a	b	c	N	N <sup>-1</sup>
13	0	10	1,42,52,50,22,13,20	34,59,31,12
30	1	2	1,43,33,47, 1,20	34,45,41, 8,37,40,32,48,45
15	9	3	1,43,40,48	34,43,20
0	17	4	1,43,47,49,27,11,15	34,40,59, 0,55,25, 6,10,22,13,20
9	4	9	1,44,10	34,33,36
26	5	1	1,44,51,27,21,36	34,19,56,11,29, 3,45
11	13	2	1,44,58,33,36	34,17,36,47,24,26,40
20	0	7	1,45,20,59,15,33,20	34,10,18,45
5	8	8	1,45,28, 7,30	34, 8
22	9	0	1,46,10, 5,57, 7,12	33,54,30,18,45
7	17	1	1,46,17,17,31,12	33,52,12,37,55,59,40,14,48,53,20
16	4	6	1,46,40	33,45
1	12	7	1,46,47,13,35,37,30	33,42,42,57,46,40
3	21	0	1,47,37, 0,29,20,24	33,27, 7,17,27,53,44,56, 6,48,13,49, 37,46,40
27	0	4	1,47,52,41,28,53,20	33,22,15,29,52,58, 7,30
12	8	5	1,48	33,20
6	3	11	1,48,30,25	33,10,39,21,36
23	4	3	1,49,13,36	32,57,32,20,37,30
8	12	4	1,49,21	32,55,18,31, 6,40
2	7	10	1,49,51,47,48,45	32,46, 4,48
34	0	1	1,50,28, 2, 9,25,20	32,35,19,49,20,19,15,45,42,11,15
19	8	2	1,50,35,31,12	32,33, 7,30
4	16	3	1,50,43, 0,45	32,30,55,19,36,57,17,,2,13,20
13	3	8	1,51, 6,40	32,24
30	4	0	1,51,50,53,11, 2,24	32,11,11,25,45,59,45,56,15
15	12	1	1,51,58,27,50,24	32, 9, 0,44,26,40
9	20	2	1,52, 6, 3, 0,33,45	32, 6,50,11,57,58,47,56,16, 7,54, 4,26,
9	7	7	1,52,30	32
3	2	13	1,53, 1,41, 2,30	31,51, 1,47, 8, 9,36
11	16	0	1,53,22,26,41,16,48	31,45,11,50,33,44,41,28,53,20
20	3	5	1,53,46,40	31,38,26,15
5	11	6	1,53,54,22,30	31,36,17,46,40
16	7	4	1,55,12	31,15
1	15	5	1,55,19,48,16,52,30	31,12,53, 6,49,52,35,33,20
10	2	10	1,55,44,26,40	31, 6,14,24
27	3	2	1,56,30,30,24	30,53,56,34,20 9,22,30
12	11	3	1,56,38,24	30,51,51, 6,40
6	6	9	1,57,11,15	30,43,12
0	1	15	1,57,44,15,15, 6,15	30,34,35,18,51, 2, 0,57,36

a	b	c	N	N <sup>-1</sup>
23	7	1	1,57,57,53,16,48	30,31, 3,16,52,30
8	15	2	1,58, 5,52,48	30,28,59,22, 8,23,42,13,20
17	2	7	1,58,31, 6,40	30,22,30
2	10	8	1,58,39, 8,26,15	30,20,26,40
19	11	0	1,59,26,21,41,45,36	30, 8,26,56,40
4	19	1	1,59,34,27,12,36	30, 6,24,33,43, 6,22,26,30, 7,24,26,40
13	6	6	2	30
7	1	12	2, 0,33,47,46,40	29,51,35,25,26,24
0	23	0	2, 1, 4, 8, 3, 0,27	29,44, 6,28,51,27,46,36,32,42,52,17, 26,54,48,53,20
24	2	4	2, 1,21,46,40	29,39,47, 6,33,45
9	10	5	2, 1,30	29,37,46,40
3	5	11	2, 2, 4,13, 7,30	29,29,28,19,12
20	6	3	2, 2,52,48	29,17,48,45
5	14	4	2, 3, 1, 7,30	29,15,49,47,39,15,33,20
14	1	9	2, 3,27,24,26,40	29, 9,36
31	2	1	2, 4,16,32,25,36	28,58, 4,17,11,23,47,20,37,30
16	10	2	2, 4,24,57,36	28,56, 6,40
1	18	3	2, 4,33,23,20,37,30	28,54, 9,10,46,10,55, 8,38,31, 6,40
10	5	8	2, 5	28,48
4	0	14	2, 5,35,12,16, 6,40	28,39,55,36,25,20,38,24
27	6	0	2, 5,49,44,49,55,12	28,36,36,49,34,13, 7,30
12	14	1	2, 5,58,16,19,12	28,34,40,39,30,22,13,20
21	1	6	2, 6,25,11, 6,40	28,28,35,37,30
6	9	7	2, 6,33,45	28,26,40
0	4	13	2, 7, 9,23,40,18,45	28,18,41,35,13,55,12
8	18	0	2, 7,32,45, 1,26,24	28,13,30,31,36,39,43,32,20,44,26,40
17	5	5	2, 8	28, 7,30
2	13	6	2, 8, 8,40,18,45	28, 5,35,48, 8,53,20
11	0	11	2, 8,36, 2,57,46,40	27,59,36,57,36
28	1	3	2, 9,27,13,46,40	27,48,32,54,54, 8,26,15
13	9	4	2, 9,36	27,46,40
7	4	10	2,10,12,30	27,38,52,48
24	5	2	2,11, 4,19,12	27,27,56,57,11,15
9	13	3	2,11,13,12	27,26, 5,25,55,33,20
18	0	8	2,11,41,14, 4,26,40	27,20,15
3	8	9	2,11,50, 9,22,30	27,18,24
35	1	0	2,12,33,38,35,18,24	27, 9,26,31, 6,56, 3, 8, 5, 9,22,30
20	9	1	2,12,42,37,26,24	27, 7,36,15
5	17	2	2,12,51,36,54	27, 5,46, 6,20,47,44,11,51, 6,40

From the Cop. Neugebauer papers.  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, U.S.A.

a	b	c	N	N <sup>-1</sup>
14	4	7	2,13,20	27
16	13	0	2,14,22, 9,24,28,48	26,47,30,37, 2,13,20
1	21	1	2,14,31,15,36,40,30	26,45,41,49,58,18,59,56,53,26,35, 3, 42,13,20
25	0	5	2,14,50,51,51, 6,40	26,41,48,23,54,22,30
10	8	6	2,15	26,40
4	3	12	2,15,38, 1,15	26,32,31,29,16,48
21	4	4	2,16,32	26,22, 1,52,30
6	12	5	2,16,41,15	26,20,14,48,53,20
0	7	11	2,17,19,44,45,56,15	26,12,51,50,24
32	0	2	2,18, 5, 2,41,46,40	26, 4,15,51,28,15,24,36,33,45
17	8	3	2,18,14,24	26, 2,30
2	16	4	2,18,23,45,56,15	26, 0,44,15,41,33,49,37,46,40
11	3	9	2,18,53,20	25,55,12
28	4	1	2,19,48,36,28,48	25,44,57, 8,36,47,48,45
13	12	2	2,19,58, 4,48	25,43,12,35,33,20
7	7	8	2,20,37,30	25,36
1	2	14	2,21,17, 6,18, 7,30	25,28,49,25,42,31,40,48
24	8	0	2,21,33,27,56, 9,36	25,25,52,44, 3,45
9	16	1	2,21,43, 3,21,36	25,24, 9,28,26,59,45,11, 6,40
18	3	6	2,22,13,20	25,18,45
3	11	7	2,22,22,58, 7,30	25,17, 2,13,20
5	20	0	2,23,29,20,39, 7,12	25, 5,20,28, 5,55,18,42, 5, 6,10,22,13,
14	7	5	2,24	25
8	2	11	2,24,40,33,20	24,52,59,31,12
25	3	3	2,25,38, 8	24,43, 9,15,28, 7,30
10	11	4	2,25,48	24,41,28,53,20
4	6	10	2,26,29, 3,45	24,34,33,36
21	7	2	2,27,27,21,36	24,24,50,37,30
6	15	3	2,27,37,21	24,23,11,29,42,42,57,46,40
15	2	8	2,28, 8,53,20	24,18
0	10	9	2,28,18,55,32,48,45	24,16,21,20
32	3	0	2,29, 7,50,54,43,12	24, 8,23,34,19,29,49,27,11,15
17	11	1	2,29,17,57, 7,12	24, 6,45,33,20
2	19	2	2,29,28, 4, 0,45	24, 5, 7,38,58,29, 5,57,12, 5,55,33,20
11	6	7	2,30	24
5	1	13	2,30,42,14,43,20	23,53,16,20,21, 7,12
13	15	0	2,31, 9,55,35, 2,24	23,48,53,52,55,18,31, 6,40
22	2	5	2,31,42,13,20	23,43,49,41,15
7	10	6	2,31,52,30	23,42,13,20

a	b	c	N	N <sup>-1</sup>
1	5	12	2,32,35,16,24,22,30	23,35,34,39,21,36
18	6	4	2,33,36	23,26,15
3	14	5	2,33,46,24,22,30	23,24,39,50,7,24,26,40
12	1	10	2,34,19,15,33,20	23,19,40,48
29	2	2	2,35,20,40,32	23,10,27,25,45,7,1,52,30
14	10	3	2,35,31,12	23,8,53,20
8	5	9	2,36,15	23,2,24
2	0	15	2,36,59,0,20,8,20	22,55,56,29,8,16,30,43,12
25	6	1	2,37,17,11,2,24	22,53,17,27,39,22,30
10	14	2	2,37,27,50,24	22,51,44,31,36,17,46,40
19	1	7	2,38,1,28,53,20	22,46,52,30
4	9	8	2,38,12,11,15	22,45,20
21	10	2	2,39,15,8,55,40,48	22,36,20,12,30
6	18	1	2,39,25,56,16,48	22,34,48,25,17,19,46,49,52,35,33,2
15	5	6	2,40	22,30
0	13	7	2,40,10,50,23,26,15	22,28,28,38,31,6,40
9	0	12	2,40,45,3,42,13,20	22,23,41,34,4,48
2	22	0	2,41,25,30,44,0,36	22,18,4,51,38,35,49,57,24,32,9,1, 5,11,6,40
26	1	4	2,41,49,2,13,20	22,14,50,19,55,18,45
11	9	5	2,42	22,13,20
5	4	11	2,42,45,37,30	22,7,6,14,24
22	5	3	2,43,50,24	21,58,21,33,45
7	13	4	2,44,1,30	21,56,52,20,44,26,40
16	0	9	2,44,36,32,35,33,20	21,52,12
1	8	10	2,44,47,41,43,7,30	21,50,43,12
33	1	1	2,45,42,3,14,8	21,43,33,12,53,32,50,30,28,7,30
18	9	2	2,45,53,16,48	21,42,5
3	17	3	2,46,4,31,7,30	21,40,36,53,4,38,11,21,28,53,20
12	4	8	2,46,40	21,36
29	5	0	2,47,46,19,46,33,36	21,27,27,37,10,39,50,37,30
14	13	1	2,47,57,41,45,36	21,26,0,29,37,46,40
23	0	6	2,48,33,34,48,53,20	21,21,26,43,7,30
8	8	7	2,48,45	21,20
2	3	13	2,49,32,31,33,45	21,14,1,11,25,26,24
10	17	0	2,50,3,40,1,55,12	21,10,7,53,42,29,47,39,15,33,20
19	4	5	2,50,40	21,5,37,30
4	12	6	2,50,51,33,45	21,4,11,51,6,40
30	0	3	2,52,36,18,22,13,20	20,51,24,41,10,36,19,41,15
15	8	4	2,52,48	20,50

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
0	16	5	2,52,59,42,25,18,45	20,48,35,24,33,15, 3,42,13,20
9	3	10	2,53,36,40	20,44, 9,36
26	4	2	2,54,45,45,36	20,35,57,42,53,26,15
11	12	3	2,54,57,36	20,34,34, 4,26,40
5	7	9	2,55,46,52,30	20,28,48
37	0	0	2,56,44,51,27, 4,32	20,22, 4,53,20,12, 2,21, 3,52, 1,52,30
22	8	1	2,56,56,49,55,12	20,20,42,11,15
7	16	2	2,57, 8,49,12	20,19,19,34,45,35,48, 8,53,20
16	3	7	2,57,46,40	20,15
1	11	8	2,57,58,42,39,22,30	20,13,37,46,40
18	12	0	2,59, 9,32,32,38,24	20, 5,37,57,46,40
3	20	1	2,59,21,40,48,54	20, 4,16,22,28,44,14,57,40, 4,56,17,40
12	7	6	3	20
6	2	12	3, 0,50,41,40	19,54,23,36,57,36
23	3	4	3, 2, 2,40	19,46,31,24,22,30
8	14	5	3, 2,15	19,45,11, 6,40
2	6	11	3, 3, 6,19,41,15	19,39,38,52,48
19	7	3	3, 4,19,12	19,31,52,30
4	15	4	3, 4,31,41,15	19,30,33,11,46,10,22,13,20
13	2	9	3, 5,11, 6,40	19,26,24
30	3	1	3, 6,24,48,38,24	19,18,42,51,27,35,51,33,45
15	11	2	3, 6,37,26,24	19,17,24,26,40
0	19	3	3, 6,50, 5, 0,56,15	19,16, 6, 7,10,47,16,45,45,40,44,26,40
9	6	8	3, 7,30	19,12
3	1	14	3, 8,22,48,24,10	19, 6,37, 4,16,53,45,36
26	7	0	3, 8,44,37,14,52,48	19, 4,24,33, 2,48,45
11	15	1	3, 8,57,24,28,48	19, 3, 7, 6,20,14,48,53,20
20	2	6	3, 9,37,46,40	18,59, 3,45
5	10	7	3, 9,50,37,30	18,57,46,40
7	19	0	3,11,19, 7,32, 9,36	18,49, 0,21, 4,26,29, 1,33,49,37,46,40
16	6	5	3,12	18,45
1	14	6	3,12,13, 0,28, 7,30	18,43,43,52, 5,55,33,20
10	1	11	3,12,54, 4,26,40	18,39,44,38,24
27	2	3	3,14,10,50,40	18,32,21,56,36, 5,37,30
12	10	4	3,14,24	18,31, 6,40
6	5	10	3,15,18,45	18,25,55,12
0	0	16	3,16,13,45,25,10,25	18,20,45,11,18,37,12,34,33,36
23	6	2	3,16,36,28,48	18,18,37,58, 7,30
8	14	3	3,16,49,48	18,17,23,37,17, 2,13,20
17	1	8	3,17,31,51, 6,40	18,13,30

from the Otto Neugebauer papers  
 Courtesy of the Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
2	9	9	3,17,45,14, 3,45	18,12,16
34	2	0	3,18,50,27,52,57,36	18, 6,17,40,44,37,22, 5,23,26,15
19	10	1	3,19, 3,56, 9,36	18, 5, 4,10
4	18	2	3,19,17,25,21	18, 3,50,44,13,51,49,27,54, 4,26,40
13	5	7	3,20	18
7	0	13	3,20,56,19,37,46,40	17,54,57,15,15,50,24
15	14	0	3,21,33,14, 6,43,12	17,51,40,24,41,28,53,20
0	22	1	3,21,46,53,25, 0,45	17,50,27,53,18,52,39,57,55,37,43,22,2 8,53,20
24	1	5	3,22,16,17,46,40	17,47,52,15,56,15
9	9	6	3,22,30	17,46,40
3	4	12	3,23,27, 1,52,30	17,41,40,59,31,12
20	5	4	3,24,48	17,34,41,15
5	13	5	3,25, 1,52,30	17,33,29,52,35,33,20
14	0	10	3,25,45,40,44,26,40	17,29,45,36
31	1	2	3,27, 7,34, 2,40	17,22,50,34,18,50,16,24,22,30
16	9	3	3,27,21,36	17,21,40
1	17	4	3,27,35,38,54,22,30	17,20,29,30,27,42,33, 5,11, 6,40
10	4	9	3,28,20	17,16,48
27	5	1	3,29,42,54,43,12	17, 9,58, 5,44,31,52,30
12	13	2	3,29,57, 7,12	17, 8,48,23,42,13,20
21	0	7	3,30,41,58,31, 6,40	17, 5, 9,22,30
6	8	8	3,30,56,15	17, 4
0	3	14	3,31,55,39,27,11,15	16,59,12,57, 8,21, 7,12
23	9	0	3,32,20,11,54,14,24	16,57,15, 9,22,30
8	17	1	3,32,34,35, 2,24	16,56, 6,18,57,59,50, 7,24,26,40
17	4	6	3,33,20	16,52,30
2	12	7	3,33,34,27,11,15	16,51,21,28,53,20
4	21	0	3,35,14, 0,58,40,48	16,43,33,38,43,56,52,28, 3,24, 6,54, 48,53,20
28	0	4	3,35,45,22,57,46,40	16,41, 7,44,56,29, 3,45
13	8	5	3,36	16,40
7	3	11	3,37, 0,50	16,35,19,40,48
24	4	3	3,38,27,12	16,28,46,10,18,45
9	12	4	3,38,42	16,27,39,15,33,20
3	7	10	3,39,43,35,37,30	16,23, 2,24
35	0	1	3,40,56, 4,18,50,40	16,17,39,54,40, 9,37,52,51, 5,37,30
20	8	2	3,41,11, 2,24	16,16,33,45
5	16	3	3,41,26, 1,30	16,15,27,39,48,28,38,31, 6,40
14	3	8	3,42,13,20	16,12

a	b	c	N	N <sup>-1</sup>
31	4	0	3,43,41,46,22, 4,48	16, 5,35,42,52,59,52,58, 7,30
16	12	1	3,43,56,55,40,48	16, 4,30,22,13,20
1	20	2	3,44,12, 6, 1, 7,30	16, 3,25, 5,58,59,23,58, 8, 3,57, 2,
10	7	7	3,45	16
4	2	13	3,46, 3,22, 5	15,55,30,53,34, 4,48
12	16	0	3,46,44,53,22,33,36	15,52,35,55,16,52,20,44,26,40
21	3	5	3,47,33,20	15,49,13, 7,30
6	11	6	3,47,48,45	15,48, 8,53,20
0	6	12	3,48,52,54,36,33,45	15,43,43, 6,14,24
17	7	4	3,50,24	15,37,30
2	15	5	3,50,39,36,33,45	15,36,26,33,24,56,17,46,40
11	2	10	3,51,28,53,20	15,33, 7,12
28	3	2	3,53, 7, 0,48	15,26,58,17,10, 4,41,15
13	11	3	3,53,16,48	15,25,55,33,20
7	6	9	3,54,22,30	15,21,36
1	1	15	3,55,28,30,30,12,30	15,17,17,39,25,31, 0,28,48
24	7	1	3,55,55,46,33,36	15,15,31,38,26,15
9	15	2	3,56,11,45,36	15,14,29,41, 4,11,51, 6,40
18	2	7	3,57, 2,13,20	15,11,15
3	10	8	3,57,18,16,52,30	15,10,13,20
20	11	0	3,58,52,43,23,31,12	15, 4,13,28,20
5	19	1	3,59, 8,54,25,12	15, 3,12,16,51,33,11,13,15, 3,42,13,
14	6	6	4	15
8	1	12	4, 1, 7,35,33,20	14,55,47,42,43,12
1	23	0	4, 2, 8,16, 6, 0,54	14,52, 3,14,25,43,53,18,16,21,26, 8, 27,24,26,40
25	2	4	4, 2,43,33,20	14,49,53,33,16,52,30
10	10	5	4, 3	14,48,53,20
4	5	11	4, 4, 8,26,15	14,44,44, 9,36
21	6	3	4, 5,45,36	14,38,54,22,30
6	14	4	4, 6, 2,15	14,37,54,53,49,37,46,40
15	1	9	4, 6,54,48,53,20	14,34,48
0	9	10	4, 7,11,32,34,41,15	14,33,48,48
32	2	1	4, 8,33, 4,51,12	14,29, 2, 8,35,41,53,40,18,45
17	10	2	4, 8,49,55,12	14,28, 3,20
2	18	3	4, 9, 6,46,41,15	14,27, 4,35,23, 5,27,34,19,15,33,20
11	5	8	4,10	14,24
5	0	14	4,11,10,24,32,13,20	14,19,57,48,12,46,19,12
28	6	0	4,11,39,29,39,50,24	14,18,18,24,47, 6,33,45
13	14	1	4,11,56,32,38,24	14,17,20,19,45,11, 6,40

From the Otto Neubauer papers

Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA



a	b	c	N	N-1
22	1	6	4,12,50,22,13,20	14,14,17,48,45
7	9	7	4,13, 7,30	14,13,20
1	4	13	4,14,18,47,20,37,30	14, 9,20,47,36,57,36
9	18	0	4,15, 5,30, 2,52,48	14, 6,45,15,48,19,51,46,10,22,13,20
18	5	5	4,16	14, 3,45
3	13	6	4,16,17,20,37,30	14, 2,47,54, 4,26,40
12	0	11	4,17,12, 5,55,33,20	13,59,48,28,48
29	1	3	4,18,54,27,33,20	13,54,16,27,27, 4,13, 7,30
14	9	4	4,19,12	13,53,20
8	4	10	4,20,25	13,49,26,24
25	5	2	4,22, 8,38,24	13,43,58,28,35,37,30
10	13	3	4,22,26,24	13,43, 2,42,57,46,10
19	0	8	4,23,22,28, 8,53,20	13,40, 7,30
4	8	9	4,23,40,18,45	13,39,12
36	1	0	4,25, 7,17,10,36,48	13,34,43,15,35,28,12,20,12
21	9	1	4,25,25,14,52,48	13,33,48, 7,30
6	17	2	4,25,43,13,48	13,32,53, 3,10,27,22,37,30
15	4	7	4,26,40	13,30
0	12	8	4,26,58, 3,59, 3,45	13,29, 5,11, 6,40
17	13	0	4,28,44,18,48,57,36	13,23,45,18,71, 6,40
2	21	1	4,29, 2,31,13,21	13,22,50,51,59, 9,25,58,26,13,17,20
26	0	5	4,29,41,43,42,13,20	13,20,54,11,27,20
11	8	6	4,30	13,20
5	3	12	4,31,16, 2,30	13,16,15,44,38,2
22	4	4	4,33, 4	13,11, 0,56,15
7	12	5	4,33,22,30	13,10, 7,24,26,40
1	7	11	4,34,39,29,31,52,30	13, 6,25,55,12
33	0	2	4,36,10, 5,23,33,20	13, 2, 7,55,44, 7,42,18,16,52,30
18	8	3	4,36,28,48	13, 1,15
3	16	4	4,36,47,31,52,30	13, 0,22, 7,50,46,54,48,53,20
12	3	9	4,37,46,40	12,57,36
29	4	1	4,39,37,12,57,36	12,52,28,34,18,23,54,22,30
14	12	2	4,39,56, 9,36	12,51,36,17,46,40
8	7	8	4,41,15	12,48
2	2	14	4,42,34,12,36,15	12,44,24,42,51,15,50,24
25	8	0	4,43, 6,55,52,19,12	12,42,56,22, 1,52,30
10	16	1	4,43,26, 6,43,12	12,42, 4,44,13,29,52,35,33,20
19	3	6	4,44,26,40	12,39,22,30
4	11	7	4,44,45,56,15	12,38,31, 6,40



A.S. pinxit 8-42

a	b	c	N	N <sup>-1</sup>
6	20	0	4,46,58,41,18,14,24	12,32,40,14, 2,57,39,21, 2,33, 5,11,6,40
15	7	5	4,48	12,30
0	15	6	4,48,19,30,42,11,15	12,29, 9,14,43,57, 2,13,20
9	.2	11	4,49,21, 6,40	12,26,29,45,36
26	3	3	4,51,16,16	12,21,34,37,44, 3,45
11	11	4	4,51,36	12,20,44,26,40
5	6	10	4,52,58, 7,30	12,17,16,48
22	7	2	4,54,54,43,12	12,12,25,18,45
7	15	3	4,55,14,42	12,11,35,44,51,21,28,53,20
16	2	8	4,56,17,46,40	12, 9
1	10	9	4,56,37,51, 5,37,30	12, 8,10,40
33	3	0	4,58,15,41,49,26,24	12, 4,11,47, 9,44,54,43,35,37,30
18	11	1	4,58,35,54,14,24	12, 3,22,46,40
3	19	2	4,58,56, 8, 1,30	12, 2,33,49,29,14,32,58,36, 2,57,46,40
12	6	7	5	12
6	1	13	5, 1,24,29,26,40	11,56,38,10,10,33,36
14	15	0	5, 2,19,51,10, 4,48	11,54,26,56,27,39,15,33,20
23	2	5	5, 3,24,26,40	11,51,54,50,37,30
8	10	6	5, 3,45	11,51, 6,40
2	5	12	5, 5,10,32,48,45	11,47,47,19,40,48
19	6	4	5, 7,12	11,43, 7,30
4	14	5	5, 7,32,48,45	11,42,19,55, 3,42,13,20
13	1	10	5, 8,38,31, 6,40	11,39,50,24
30	2	2	5,10,41,21, 4	11,35,13,42,52,33,30,56,15
15	10	3	5,11, 2,24	11,34,26,40
0	18	4	5,11,23,28,21,33,45	11,33,39,40,18,28,22, 3,27,24,26,40
9	5	9	5,12,30	11,31,12
3	0	15	5,13,58, 0,40,16,40	11,27,58,14,34, 8,15,21,36
26	6	1	5,14,34,22, 4,48	11,26,38,43,49,41,15
11	14	2	5,14,55,40,48	11,25,52,15,48, 8,53,20
20	1	7	5,16, 2,57,46,40	11,23,26,15
5	9	8	5,16,24,22,30	11,22,40
22	10	0	5,18,30,17,51,21,36	11,18,10, 6,15
7	18	1	5,18,51,52,33,36	11,17,24,12,38,39,53,24,56,17,46,40
16	5	6	5,20	11,15
1	13	7	5,20,21,40,46,52,30	11,14,14,19,15,33,20
10	0	12	5,21,30, 7,24,26,40	11,11,50,47, 2,24
3	22	0	5,22,51, 1,28, 1,12	11,9, 2,25,49,17,54,58,42,16, 4,36,32, 35,33,20
27	1	4	5,23,38, 4,26,40	11, 7,25, 9,57,39,22,30

a	b	c	N	N <sup>-1</sup>
12	9	5	5,24	11, 6,40
6	4	11	5,25,31,15	11, 3,33, 7,12
23	5	3	5,27,40,48	10,59,10,46,52,30
8	13	4	5,28, 3	10,58,26,10,22,13,20
17	0	9	5,29,13, 5,11, 6,40	10,56, 6
2	8	10	5,29,35,23,26,15	10,55,21,36
34	1	1	5,31,24, 6,28,16	10,51,46,36,26,46,25,15,14, 3,45
19	9	2	5,31,46,33,36	10,51, 2,30
4	17	3	5,32, 9, 2,15	10,50,18,26,32,19, 5,40,44,26,40
13	4	8	5,33,20	10,48
30	5	0	5,35,32,39,33, 7,12	10,43,43,48,35,19,55,18,45
15	13	1	5,35,55,23,31,12	10,43, 0,14,48,53,20
0	21	2	5,36,18, 9, 1,41,15	10,42,16,43,59,19,35,58,45,22,38, 1,28, 53,20
24	0	6	5,37, 7, 9,37,46,40	10,40,43,21,33,45
9	8	7	5,37,30	10,40
3	3	13	5,39, 5, 3, 7,30	10,37, 0,35,42,43,12
11	17	0	5,40, 7,20, 3,50,24	10,35, 3,56,51,14,53,49,37,46,40
20	4	5	5,41,20	10,32,48,45
5	12	6	5,41,43, 7,30	10,32, 5,55,33,20
31	0	3	5,45,12,36,44,26,40	10,25,42,20,35,18, 9,50,37,30
16	8	4	5,45,36	10,25
1	16	5	5,45,59,24,50,37,30	10,24,17,42,16,37,31,51, 6,40
10	3	10	5,47,13,20	10,22, 4,48
27	4	2	5,49,31,31,12	10,17,58,51,26,43, 7,30
12	12	3	5,49,55,12	10,17,17, 2,13,20
6	7	9	5,51,33,45	10,14,24
0	2	15	5,53,12,45,45,18,45	10,11,31,46,17, 0,40,19,12
38	0	0	5,53,29,42,54, 9, 4	10,11, 2,26,40, 6, 1,10,31,56, 0,56,15
23	8	1	5,53,53,39,50,24	10,10,21, 5,37,30
8	16	2	5,54,17,38,24	10, 9,39,47,22,47,54, 4,26,40
17	3	7	5,55,33,20	10, 7,30
2	11	8	5,55,57,25,18,45	10, 6,48,53,20
19	12	0	5,58,19, 5, 5,16,48	10, 2,48,58,53,20
4	20	1	5,58,43,21,37,48	10, 2, 8,11,14,22, 7,28,50, 2,28, 8,53,20
13	7	6	6	10
7	2	12	6, 1,41,23,20	9,57,11,48,28,48
0	24	0	6, 3,12,24, 9, 1,21	9,54,42,9,37,15,32,10,54,17,25,48,58,16, 17,46,40
24	3	4	6, 4, 5,20	9,53,15,42,11,15

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N-1
9	11	5	6, 4,30	9,52,35,33,20
3	6	11	6, 6,12,39,22,30	9,49,49,26,24
20	7	3	6, 8,38,24	9,45,56,15
5	15	4	6, 9, 3,22,30	9,45,16,35,53, 5,11, 6,40
14	2	9	6,10,22,13,20	9,43,12
31	3	1	6,12,49,37,16,48	9,39,21,25,43,47,55,46,52,30
16	11	2	6,13,14,52,48	9,38,42,13,20
1	19	3	6,13,40,10, 1,52,30	9,38, 3, 3,35,23,38,22,52,50,22,13,2
10	6	8	6,15	9,36
4	1	14	6,16,45,36,48,20	9,33,18,32, 8,26,52,48
27	7	0	6,17,29,14,29,45,36	9,32,12,16,31,24,22,30
12	15	1	6,17,54,48,57,36	9,31,33,33,10, 7,24,26,40
21	2	6	6,19,15,33,20	9,29,31,52,30
6	10	7	6,19,41,15	9,28,53,20
0	5	13	6,21,28,11, 0,56,15	9,26,13,51,44,38,24
8	19	0	6,22,38,15, 4,19,12	9,24,30,10,32,13,14,30,46,54,48,53,20
17	6	5	6,24	9,22,30
2	14	6	6,24,26, 0,56,15	9,21,51,56, 2,57,46,40
11	1	11	6,25,48, 8,53,20	9,19,52,19,12
28	2	3	6,28,21,41,20	9,16,10,58,18, 2,48,45
13	10	4	6,28,48	9,15,33,20
7	5	10	6,30,37,30	9,12,57,36
1	0	16	6,32,27,30,50,20,50	9,10,22,35,39,18,36,17,16,48
24	6	2	6,33,12,57,36	9, 9,18,59, 3,45
9	14	3	6,33,39,36	9, 8,41,48,38,31, 6,40
18	1	8	6,35, 3,42,13,20	9, 6,45
3	9	9	6,35,30,28, 7,30	9, 6, 8
35	2	0	6,37,40,55,45,55,12	9, 3, 8,50,22,18,41, 2,41,43, 7,30
20	10	1	6,38, 7,52,19,12	9, 2,32, 5
5	18	2	6,38,34,50,42	9, 1,55,22, 6,55,54,43,57, 2,13,20
14	5	7	6,40	9
8	0	13	6,41,52,39,15,33,20	8,57,28,37,37,55,12
16	14	0	6,43, 6,28,13,26,24	8,55,50,12,20,44,26,40
1	22	1	6,43,33,46,50, 1,30	8,55,13,56,39,26,19,58,57,48,51,41,14 4,26,40
25	1	5	6,44,32,35,33,20	8,53,56, 7,58, 7,30
10	9	6	6,45	8,53,20
4	4	12	6,46,54, 3,45	8,50,50,29,45,36
21	5	4	6,49,36	8,47,20,37,30

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

<u>a</u>	<u>b</u>	<u>o</u>	<u>N</u>	<u>N<sup>-1</sup></u>
6	13	5	6,50, 3,45	8,46,44,56,17,46,40
15	0	10	6,51,31,21,28,53,20	8,44,52,48
0	8	11	6,51,59,14,17,48,45	8,44,17,16,48
32	1	2	6,54,15, 8, 5,20	8,41,25,17, 9,25, 8,12,11,15
17	9	3	6,54,43,12	8,40,50
2	17	4	6,55,11,17,48,45	8,40,14,45,13,51,16,32,35,33,20
11	4	9	6,56,40	8,38,24
28	5	1	6,59,25,49,26,24	8,34,59, 2,52,15,56,15
13	13	2	6,59,54,14,24	8,34,24,11,51, 6,40
22	0	7	7, 1,23,57, 2,13,20	8,32,34,41,15
7	8	8	7, 1,52,30	8,32
1	3	14	7, 3,51,18,54,22,30	8,29,36,28,34,10,33,36
24	9	0	7, 4,40,23,48,28,48	8,28,37,34,41,15
9	17	1	7, 5, 9,10, 4,48	8,28, 3, 9,28,59,55, 3,42,13,20
18	4	6	7, 6,40	8,26,15
3	12	7	7, 7, 8,54,22,30	8,25,40,44,26,40
5	21	0	7,10,28, 1,57,21,36	8,21,46,49,21,58,26,14, 1,42, 3,27, 24,26,40
29	0	4	7,11,30,45,55,33,20	8,20,33,52,28,14,31,52,30
14	8	5	7,12	8,20
8	3	11	7,14, 1,40	8,17,39,50,24
25	4	3	7,16,54,24	8,14,23, 5, 9,22,30
10	12	4	7,17,24	8,13,49,37,46,40
4	7	10	7,19,27,11,15	8,11,31,12
36	0	1	7,21,52, 8,37,41,20	8, 8,49,57,20, 4,48,56,25,32,48,45
21	8	2	7,22,22, 4,48	8, 8,16,52,30
6	16	3	7,22,52, 3	8, 7,43,49,54,14,19,15,33,20
15	3	8	7,24,26,40	8, 6
0	11	9	7,24,56,46,38,26,15	8, 5,27, 6,40
32	4	0	7,27,23,32,44, 9,36	8, 2,47,51,26,29,56,29, 3,45
17	12	1	7,27,53,51,21,36	8, 2,15,11, 6,40
2	20	2	7,28,24,12, 2,15	8, 1,42,32,59,29,41,59, 4, 1,58,31,6,
11	7	7	7,30	8
5	2	13	7,32, 6,44,10	7,57,45,26,47, 2,24
13	16	0	7,33,29,46,45, 7,12	7,56,17,57,38,26,10,22,13,20
22	3	5	7,35, 6,40	7,54,36,33,45
7	11	6	7,35,37,30	7,54, 4,26,40
1	6	12	7,37,45,49,13,7,30	7,51,51,33, 7,12
18	7	4	7,40,48	7,48,45
3	15	5	7,41,19,13, 7,30	7,48,13,16,42,28, 8,53,20

From the Otto Neugebauer papers  
 Copyright of The Johns Hopkins University and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
12	2	10	7,42,57,46,40	7,46,33,36
29	3	2	7,46, 2, 1,36	7,43,29, 8,35, 2,20,37,30
14	11	3	7,46,33,36	7,42,57,46,40
8	6	9	7,48,45	7,40,48
2	1	15	7,50,57, 1, 0,25	7,38,38,49,42,45,30,14,24
25	7	1	7,51,51,33, 7,12	7,37,45,49,13, 7,30
10	15	2	7,52,23,31,12	7,37,14,50,32, 5,55,33,20
19	2	7	7,54, 4,26,40	7,35,37,30
4	10	8	7,54,36,33,45	7,35, 6,40
21	11	0	7,57,45,26,47, 2,24	7,32, 6,44,10
6	19	1	7,58,17,48,50,24	7,31,36, 8,25,46,35,36,37,31,51, 6,40
15	6	6	8	7,30
0	14	7	8, 0,32,31, 10,18,45	7,29,29,32,50,22,13,20
9	1	12	8, 2,15,11, 6,40	7,27,53,51,21,36
2	23	0	8, 4,16,32,12, 1,48	7,26, 1,37,12,51,56,39, 8,10,43, 4,21, 43,42,13,20
26	2	4	8, 5,27, 6,40	7,24,56,46,38,26,15
11	10	5	8, 6	7,24,26,40
5	5	11	8, 8,16,52,30	7,22,22, 4,48
22	6	3	8,11,31,12	7,19,27,11,15
7	14	4	8,12, 4,30	7,18,57,26,54,48,53,20
16	1	9	8,13,49,37,46,40	7,17,24
1	9	10	8,14,23, 5, 9,22,30	7,16,54,24
33	2	1	8,17, 6, 9,42,24	7,14,31, 4,17,50,56,50, 9,22,30
18	10	2	8,17,39,50,24	7,14, 1,40
3	18	3	8,18,13,33,22,30	7,13,32,17,41,32,43,47, 9,37,46,40
12	5	8	8,20	7,12
6	0	14	8,22,20,49, 4,26,40	7, 9,58,54, 6,20, 9,36
29	6	0	8,23,18,59,19,40,48	7, 9, 9,12,23,33,16,52,30
14	14	1	8,23,53, 5,16,48	7, 8,40, 9,52,35,33,20
23	1	6	8,25,40,44,26,40	7, 7, 8,54,22,30
8	9	7	8,26,15	7, 6,40
2	4	13	8,28,37,34,41,15	7, 4,40,23,48,28,48
10	18	0	8,30,11, 0, 5,45,36	7, 3,22,37,54, 9,55,53, 5,11, 6,40
19	5	5	8,32	7, 1,52,30
4	13	6	8,32,34,41,15	7, 1,23,57, 2,13,20
13	0	11	8,34,24,11,51, 6,40	6,59,54,14,24
30	1	3	8,37,48,55, 6,40	6,57, 8,13,43,32, 6,33,45
15	9	4	8,38,24	6,56,40
0	17	5	8,38,59, 7,15,56,15	6,56,11,48,11, 5, 1,14, 4,26,40

from the *Collected Papers of*  
 Courtesy of the *Simon Stevinus* and *Beaumont Newhall* Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
9	4	10	8,40,50	6,54,43,12
26	5	2	8,44,17,16,48	6,51,59,14,17,48,45
11	13	3	8,44,52,48	6,51,31,21,28,53,20
20	0	8	8,46,44,56,17,46,40	6,50,3,45
5	8	9	8,47,20,37,30	6,49,36
37	1	0	8,50,14,34,21,13,36	6,47,21,37,46,44,0,47,1,17,20,37,30
22	9	1	8,50,50,29,45,36	6,46,54,3,45
7	17	2	8,51,26,27,36	6,46,26,31,35,11,56,2,57,46,40
16	4	7	8,53,20	6,45
1	12	8	8,53,56,7,58,7,30	6,44,32,35,33,20
18	13	0	8,57,28,37,37,55,12	6,41,52,39,15,33,20
3	21	1	8,58,5,2,26,42	6,41,25,27,29,34,44,59,13,21,38,45,55, 33,20
27	0	5	8,59,23,27,24,26,40	6,40,27,5,58,35,37,30
12	8	6	9	6,40
6	3	12	9,2,32,5	6,38,7,52,19,12
23	4	4	9,6,8	6,35,30,28,7,30
8	12	5	9,6,45	6,35,3,42,13,20
2	7	11	9,9,18,59,3,45	6,33,12,57,36
34	0	2	9,12,20,10,47,6,40	6,31,3,57,52,3,51,9,8,26,15
19	8	3	9,12,57,36	6,30,37,30
4	16	4	9,13,35,3,45	6,30,11,3,55,23,27,24,26,40
13	3	9	9,15,33,20	6,28,48
30	4	1	9,19,14,25,55,12	6,26,14,17,9,11,57,11,15
15	12	2	9,19,52,19,12	6,25,48,8,53,20
0	20	3	9,20,30,15,2,48,45	6,25,22,2,23,35,45,35,15,13,34,48,53,20
9	7	8	9,22,30	6,24
3	2	14	9,25,8,25,12,30	6,22,12,21,25,37,55,12
26	8	0	9,26,13,51,44,38,24	6,21,28,11,0,56,15
11	16	1	9,26,52,13,26,24	6,21,2,22,6,44,56,17,46,40
5	11	7	9,29,31,52,30	6,19,15,33,20
7	20	0	9,33,57,22,36,28,48	6,16,20,7,1,28,49,40,31,16,32,35,33,20
16	7	5	9,36	6,15
1	15	6	9,36,39,1,24,22,30	6,14,34,37,21,58,31,6,40
10	2	11	9,38,42,13,20	6,13,14,52,48
27	3	3	9,42,32,32	6,10,47,18,52,1,52,30
12	11	4	9,43,12	6,10,22,13,20
6	6	10	9,45,56,15	6,8,38,24
0	1	16	9,48,41,16,15,31,15	6,6,55,3,46,12,24,11,31,12
23	7	2	9,49,49,26,24	6,6,12,39,22,30

From the papers of  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
8	15	3	9,50,29,24	6, 5,47,52,25,40,44,26,40
17	2	8	9,52,35,33,20	6, 4,30
2	10	9	9,53,15,42,11,15	6, 4, 5,20
34	3	0	9,56,31,23,38,52,48	6, 2, 5,53,34,52,27,21,47,48,45
19	11	1	9,57,11,48,28,48	6, 1,41,23,20
4	19	2	9,57,52,16, 3	6, 1,16,54,44,37,16,29,18, 1,28,53,20
13	6	7	10	6
7	1	13	10, 2,48,58,53,20	5,58,19, 5, 5,16,48
15	15	0	10, 4,39,42,20, 9,36	5,57,13,28,13,49,37,46,40
0	23	1	10, 5,20,40,15, 2,15	5,56,49,17,46,17,33,19,18,32,34,27,29, 22,57,46,40
24	2	5	10, 6,48,53,20	5,55,57,25,18,45
9	10	6	10, 7,30	5,55,33,20
3	5	12	10,10,21, 5,37,30	5,53,53,39,50,24
20	6	4	10,14,24	5,51,33,45
5	14	5	10,15, 5,37,30	5,51, 9,57,31,51, 6,40
14	1	10	10,17,17, 2,13,20	5,49,55,12
31	2	2	10,21,22,42, 8	5,47,36,51,26,16,45,28, 7,30
16	10	3	10,22, 4,48	5,47,13,20
1	18	4	10,22,46,56,43, 7,30	5,46,49,50, 9,14,11, 1,43,42,13,20
10	5	9	10,25	5,45,36
4	0	15	10,27,56, 1,20,33,20	5,43,59, 7,17, 4, 7,40,48
27	6	1	10,29, 8,44, 9,36	5,43,19,21,54,50,37,30
12	14	2	10,29,51,21,36	5,42,56, 7,54, 4,26,40
21	1	7	10,32, 5,55,33,20	5,41,43, 7,30
6	9	8	10,32,48,45	5,41,20
0	4	14	10,35,46,58,21,33,45	5,39,44,19, 2,47, 2,24
23	10	0	10,37, 0,35,42,43,12	5,39, 5, 3, 7,30
8	18	1	10,37,43,45, 7,12	5,38,42, 6,19,19,56,42,28, 8,53,20
17	5	6	10,40	5,37,30
2	13	7	10,40,43,21,33,45	5,37, 7, 9,37,46,40
11	0	12	10,43, 0,14,48,53,20	5,35,55,23,31,12
4	22	0	10,45,42, 2,56, 2,24	5,34,31,12,54,38,57,29,21, 8, 2,18, 16,17,46,40
28	1	4	10,47,16, 8,53,20	5,33,42,34,58,49,41,15
13	9	5	10,48	5,33,20
7	4	11	10,51, 2,30	5,31,46,33,36
24	5	3	10,55,21,36	5,29,35,23,26,15
9	13	4	10,56, 6	5,29,13, 5,11, 6,40
18	0	9	10,58,26,10,22,13,20	5,28, 3



a	b	c	N	N-1
3	8	10	10, 59, 10, 46, 52, 30	5, 27, 40, 48
35	1	1	11, 2, 48, 12, 56, 32	5, 25, 53, 18, 13, 23, 12, 37, 37, 1, 52, 30
20	9	2	11, 3, 33, 7, 12	5, 25, 31, 15
5	17	3	11, 4, 18, 4, 30	5, 25, 9, 13, 16, 9, 32, 50, 22, 13, 20
14	4	8	11, 6, 40	5, 24
31	5	0	11, 11, 5, 19, 6, 14, 24	5, 21, 51, 54, 17, 39, 57, 39, 22, 30
16	13	1	11, 11, 50, 47, 2, 24	5, 21, 30, 7, 24, 26, 40
1	21	2	11, 12, 36, 18, 3, 22, 30	5, 21, 8, 21, 59, 39, 47, 59, 22, 41, 19, 0, 44, 26, 40
25	0	6	11, 14, 14, 19, 15, 33, 20	5, 20, 21, 40, 46, 52, 30
10	8	7	11, 15	5, 20
4	3	13	11, 18, 10, 6, 15	5, 18, 30, 17, 51, 21, 36
12	17	0	11, 20, 14, 40, 7, 40, 48	5, 17, 31, 58, 25, 37, 26, 54, 48, 53, 20
21	4	5	11, 22, 40	5, 16, 24, 22, 30
6	12	6	11, 23, 26, 15	5, 16, 2, 57, 46, 40
0	7	12	11, 26, 38, 43, 49, 41, 15	5, 14, 34, 22, 4, 48
32	0	3	11, 30, 25, 13, 28, 53, 20	5, 12, 51, 10, 17, 39, 4, 55, 18, 45
17	8	4	11, 31, 12	5, 12, 30
2	16	5	11, 31, 58, 49, 41, 15	5, 12, 8, 51, 8, 18, 45, 55, 33, 20
11	3	10	11, 34, 26, 40	5, 11, 2, 24
28	4	2	11, 39, 3, 2, 24	5, 8, 59, 25, 43, 21, 33, 45
13	12	3	11, 39, 50, 24	5, 8, 38, 31, 6, 40
7	7	9	11, 43, 7, 30	5, 7, 12
1	2	15	11, 46, 25, 31, 30, 37, 30	5, 5, 45, 53, 8, 30, 20, 9, 36
39	0	0	11, 46, 59, 25, 48, 18, 8	5, 5, 31, 13, 20, 3, 0, 35, 15, 58, 0, 28, 7, 3
24	8	1	11, 47, 47, 19, 40, 48	5, 5, 10, 32, 48, 45
9	16	2	11, 48, 35, 16, 48	5, 4, 49, 53, 41, 23, 57, 2, 13, 20
18	3	7	11, 51, 6, 40	5, 3, 45
3	11	8	11, 51, 54, 50, 37, 30	5, 3, 24, 26, 40
20	12	0	11, 56, 38, 10, 10, 33, 36	5, 1, 24, 29, 26, 40
5	20	1	11, 57, 26, 43, 15, 36	5, 1, 4, 5, 37, 11, 3, 44, 25, 1, 14, 4, 26, 4
14	7	6	12	5
8	2	12	12, 3, 22, 46, 40	4, 58, 35, 54, 14, 24
1	24	0	12, 6, 24, 48, 18, 2, 42	4, 57, 21, 4, 48, 34, 37, 46, 5, 27, 8, 42, 54, 29, 8, 8, 53, 20
25	3	4	12, 8, 10, 40	4, 56, 37, 51, 5, 37, 30
10	11	5	12, 9	4, 56, 17, 46, 40
4	6	11	12, 12, 25, 18, 45	4, 54, 54, 43, 12
21	7	3	12, 17, 16, 48	4, 52, 58, 7, 30
6	15	4	12, 18, 6, 45	4, 52, 38, 17, 56, 32, 35, 33, 20

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton

a	b	c	N	N <sup>-1</sup>
15	2	9	12,20,44,26,40	4,51,36
0	10	10	12,21,34,37,44, 3,45	4,51,16,16
32	3	1	12,25,39,14,33,36	4,49,40,42,51,53,57,53,26,15
17	11	2	12,26,29,45,36	4,49,21, 6,40
2	19	3	12,27,20,20, 3,45	4,49, 1,31,47,41,49,11,26,25,11, 6,40
11	6	8	12,30	4,48
5	1	14	12,33,31,13,36,40	4,46,39,16, 4,13,26,24
28	7	0	12,34,58,28,59,31,12	4,46, 6, 8,15,42,11,15
13	15	1	12,35,49,37,55,12	4,45,46,46,35, 3,42,13,20
22	2	6	12,38,31, 6,40	4,44,45,56,15
7	10	7	12,39,22,30	4,44,26,40
1	5	13	12,42,56,22, 1,52,30	4,43, 6,55,52,19,12
9	19	0	12,45,16,30, 8,38,24	4,42,15, 5,16, 6,37,15,23,27,24,26,40
18	6	5	12,48	4,41,15
3	14	6	12,48,52, 1,52,30	4,40,55,58, 1,28,53,20
12	1	11	12,51,36,17,46,40	4,39,56, 9,36
29	2	3	12,56,43,22,40	4,38, 5,29, 9, 1,24,22,30
14	10	4	12,57,36	4,37,46,40
8	5	10	13, 1,15	4,36,28,48
2	0	16	13, 4,55, 1,40,41,40	4,35,11,17,49,39,18, 8,38,24
25	6	2	13, 6,25,55,12	4,34,39,29,31,52,30
10	14	3	13, 7,19,12	4,34,20,54,19,15,33,20
19	1	8	13,10, 7,24,26,40	4,33,22,30
4	9	9	13,11, 0,56,15	4,33, 4
36	2	0	13,15,21,51,31,50,24	4,31,34,25,11, 9,20,31,20,51,33,45
21	10	1	13,16,15,44,38,24	4,31,16, 2,30
6	18	2	13,17, 9,41,24	4,30,57,41, 3,27,57,21,58,31, 6,40
15	5	7	13,20	4,30
0	13	8	13,20,54,11,57,11,15	4,29,41,43,42,13,20
9	0	13	13,23,45,18,31, 6,40	4,28,44,18,48,57,36
17	14	0	13,26,12,56,26,52,48	4,27,55, 6,10,22,13,20
2	22	1	13,27, 7,33,40, 3	4,27,36,58,19,43, 9,59,28,54,25,50, 37, 2,13,20
26	1	5	13,29, 5,11, 6,40	4,26,58, 3,59, 3,45
11	9	6	13,30	4,26,40
5	4	12	13,33,48, 7,30	4,25,25,14,52,48
22	5	4	13,39,12	4,23,40,18,45
7	13	5	13,40, 7,30	4,23,22,28,8,53,20
16	0	10	13,43, 2,42,57,46,40	4,22,26,24

From the Clayton Kopp papers  
 Courtesy of John W. Wright Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
1	8	11	13,43,58,28,35,37,30	4,22, 8,38,24
33	1	2	13,48,30,16,10,40	4,20,42,38,34,42,34, 6, 5,37,30
18	9	3	13,49,26,24	4,20,25
3	17	4	13,50,22,35,37,30	4,20, 7,22,36,55,38,16,17,46,40
12	4	9	13,53,20	4,19,12
29	5	1	13,58,51,38,52,48	4,17,29,31,26, 7,58, 7,30
14	13	2	13,59,48,28,48	4,17,12, 5,55,33,20
23	0	7	14, 2,47,54, 4,26,40	4,16,17,20,37,30
8	8	8	14, 3,45	4,16
2	3	14	14, 7,42,37,48,45	4,14,48,14,17, 5,16,48
25	9	0	14, 9,20,47,36,57,36	4,14,18,47,20,37,30
10	17	1	14,10,18,20, 9,36	4,14, 1,34,44,29,57,31,51, 6,40
19	4	6	14,13,20	4,13, 7,30
4	12	7	14,14,17,48,45	4,12,50,22,13,20
6	21	0	14,20,56, 3,54,43,12	4,10,53,24,40,59,13, 7, 0,51, 1,43, 42,13,20
30	0	4	14,23, 1,31,51, 6,40	4,10,16,56,14, 7,15,56,15
15	8	5	14,24	4,10
0	16	6	14,24,58,32, 6,33,45	4, 9,43, 4,54,39, 0,44,26,40
9	3	11	14,28 3,20	4, 8,49,55,12
26	4	3	14,33,48,48	4, 7,11,32,34,41,15
11	12	4	14,34,48	4, 6,54,48,53,20
5	7	10	14,38,54,22,30	4, 5,45,36
37	0	1	14,43,44,17,15,22,40	4, 4,24,58,40, 2,24,28,12,46,24,22,30
22	8	2	14,44,44, 9,36	4, 4, 8,26,15
7	16	3	14,45,44, 6	4, 3,51,54,57, 7, 9,37,46,40
16	3	8	14,48,53,20	4, 3
1	11	9	14,49,53,33,16,52,30	4, 2,43,33,20
33	4	0	14,54,47, 5,28,19,12	4, 1,23,55,43,14,58,14,31,52,30
18	12	1	14,55,47,42,43,12	4, 1, 7,35,33,20
3	20	2	14,56,48,24, 4,30	4, 0,51,16,29,44,50,59,32, 0,59,15,33,
12	7	7	15	4
6	2	13	15, 4,13,28,20	3,58,52,43,23,31,12
14	16	0	15, 6,59,33,30,14,24	3,58, 8,58,49,13, 5,11, 6,40
23	3	5	15,10,13,20	3,57,18,16,52,30
8	11	6	15,11,15	3,57, 2,13,20
2	6	12	15,15,31,38,26,15	3,55,55,46,33,36
19	7	4	15,21,36	3,54,22,30
4	15	5	15,22,38,26,15	3,54, 6,38,21,14, 4,26,40
13	2	10	15,25,55,33,20	3,53,16,48

From the Otto Neugebauer papers  
 Courtesy of the Grigori White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
30	3	2	15,32, 4, 3,12	3,51,44,34,17,31,10,18,45
15	11	3	15,33, 7,12	3,51,28,53,20
0	19	4	15,34,10,25, 4,41,15	3,51,13,13,26, 9,27,21, 9, 8,8,53,20
9	6	9	15,37,30	3,50,24
3	1	15	15,41,54, 2, 0,50	3,49,19,24,51,22,45, 7,12
26	7	1	15,43,43, 6,14,24	3,48,52,54,36,33,45
11	15	2	15,44,47, 2,24	3,48,37,25,16, 2,57,46,40
20	2	7	15,48, 8,53,20	3,47,48,45
5	10	8	15,49,13, 7,30	3,47,33,20
22	11	0	15,55,30,53,34, 4,48	3,46, 3,22, 5
7	19	1	15,56,35,37,40,48	3,45,48, 4,12,53,17,48,18,45,55,33,20
16	6	6	16	3,45
1	14	7	16, 1, 5, 2,20,37,30	3,44,44,46,25,11, 6,40
10	1	12	16, 4,30,22,13,20	3,43,56,55,40,48
3	23	0	16, 8,33, 4,24, 3,36	3,43, 0,48,36,25,58,19,34, 5,21,32, 10,51,51, 6,40
27	2	4	16,10,54,13,20	3,42,28,23,19,13, 7,30
12	10	5	16,12	3,42,13,20
6	5	11	16,16,33,45	3,41,11, 2,24
0	0	17	16,21, 8,47, 5,52, 5	3,40, 9, 2,15,43,26,30,54,43,12
23	6	3	16,23, 2,24	3,39,43,35,37,30
8	14	4	16,24, 9	3,39,28,43,27,24,26,40
17	1	9	16,27,39,15,33,20	3,38,42
2	9	10	16,28,46,10,18,45	3,38,27,12
34	2	1	16,34,12,19,24,48	3,37,15,32, 8,55,28,25, 4,41,15
19	10	2	16,35,19,40,48	3,37, 0,50
4	18	3	16,36,27, 6,45	3,36,46, 8,50,46,21,53,34,48,53,20
13	5	8	16,40	3,36
7	0	14	16,44,41,38, 8,53,20	3,34,59,27, 3,10, 4,48
30	6	0	16,46,37,58,39,21,36	3,34,34,36,11,46,38,26,15
15	14	1	16,47,46,10,33,36	3,34,20, 4,56,17,46,40
0	22	2	16,48,54,27, 5, 3,45	3,34, 5,34,39,46,31,59,35, 7,32,40, 29,37,46,40
24	1	6	16,51,21,28,53,20	3,33,34,27,11,15
9	9	7	16,52,30	3,33,20
3	4	13	16,57,15, 9,22,30	3,32,20,11,54,14,24
11	18	0	17, 0,22, 0,11,31,12	3,31,41,18,57,4,57,56,32,35,33,20
20	5	5	17, 4	3,30,56,15
5	13	6	17, 5, 9,22,30	3,30,41,58,31, 6,40
14	0	11	17, 8,48,23,42,13,20	3,29,57, 7,12

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
31	1	3	17, 15, 37, 50, 13, 20	3, 28, 34, 6, 51, 46, 3, 16, 52, 30
16	9	4	17, 16, 48	3, 28, 20
1	17	5	17, 17, 58, 14, 31, 52, 30	3, 28, 5, 54, 5, 32, 30, 37, 2, 13, 20
10	4	10	17, 21, 40	3, 27, 21, 36
27	5	2	17, 28, 34, 33, 36	3, 25, 59, 37, 8, 54, 22, 30
12	13	3	17, 29, 45, 36	3, 25, 45, 40, 44, 26, 40
21	0	8	17, 33, 29, 52, 35, 33, 20	3, 25, 1, 52, 30
6	8	9	17, 34, 41, 15	3, 24, 48
0	3	15	17, 39, 38, 17, 15, 56, 15	3, 23, 50, 35, 25, 40, 13, 26, 24
38	1	0	17, 40, 29, 8, 42, 27, 12	3, 23, 40, 48, 53, 22, 0, 23, 30, 38, 40, 18, 45
23	9	1	17, 41, 40, 59, 31, 12	3, 23, 27, 1, 52, 30
8	17	2	17, 42, 52, 55, 12	3, 23, 13, 15, 47, 35, 58, 1, 28, 53, 20
17	4	7	17, 46, 40	3, 22, 30
2	12	8	17, 47, 52, 15, 56, 15	3, 22, 16, 17, 46, 40
19	13	0	17, 54, 57, 15, 15, 50, 24	3, 20, 56, 19, 37, 46, 40
4	21	1	17, 56, 10, 4, 53, 24	3, 20, 42, 43, 44, 47, 22, 29, 36, 40, 49, 22, 57 46, 40
28	0	5	17, 58, 46, 54, 48, 53, 20	3, 20, 13, 32, 59, 17, 48, 45
13	8	6	18	3, 20
7	3	12	18, 5, 4, 10	3, 19, 3, 56, 9, 36
0	25	0	18, 9, 37, 12, 27, 4, 3	3, 18, 14, 3, 12, 23, 5, 10, 43, 38, 5, 48, 36, 19, 25, 25, 55, 33,
24	4	4	18, 12, 16	3, 17, 45, 14, 3, 45
9	12	5	18, 13, 30	3, 17, 31, 51, 6, 40
3	7	11	18, 18, 37, 58, 7, 30	3, 16, 36, 28, 48
35	0	2	18, 24, 40, 21, 34, 13, 20	3, 15, 31, 58, 56, 1, 55, 34, 34, 13, 7, 30
20	8	3	18, 25, 55, 12	3, 15, 18, 45
5	16	4	18, 27, 10, 7, 30	3, 15, 5, 31, 57, 41, 43, 42, 13, 20
14	3	9	18, 31, 6, 40	3, 14, 24
31	4	1	18, 38, 28, 51, 50, 24	3, 13, 7, 8, 34, 35, 58, 35, 37, 30
16	12	2	18, 39, 44, 38, 24	3, 12, 54, 4, 26, 40
1	20	3	18, 41, 0, 30, 5, 37, 30	3, 12, 41, 1, 11, 47, 52, 47, 37, 36, 47, 24, 26
10	7	8	18, 45	3, 12
4	2	14	18, 50, 16, 50, 25	3, 11, 6, 10, 42, 48, 57, 36
27	8	0	18, 52, 27, 43, 29, 16, 48	3, 10, 44, 5, 30, 28, 7, 30
12	16	1	18, 53, 44, 26, 52, 48	3, 10, 31, 11, 3, 22, 28, 8, 53, 20
21	3	6	18, 57, 46, 40	3, 9, 50, 37, 30
6	11	7	18, 59, 3, 45	3, 9, 37, 46, 40
0	6	13	19, 4, 24, 33, 2, 48, 45	3, 8, 44, 37, 14, 52, 48

From the Otto Neuberger Papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>-1</sup>
8	20	0	19, 7, 54, 45, 12, 57, 36	3, 8, 10, 3, 30, 44, 24, 50, 15, 38, 16, 17, 46, 40
17	7	5	19, 12	3, 7, 30
2	15	6	19, 13, 18, 2, 48, 45	3, 7, 17, 18, 40, 59, 15, 33, 20
11	2	11	19, 17, 24, 26, 40	3, 6, 37, 26, 24
28	2	3	19, 25, 5, 4	3, 5, 23, 39, 26, 0, 56, 15
13	11	4	19, 26, 24	3, 5, 11, 6, 40
7	6	10	19, 31, 52, 30	3, 4, 19, 12
1	1	16	19, 37, 22, 32, 31, 2, 30	3, 3, 27, 31, 53, 6, 12, 5, 45, 36
24	7	2	19, 39, 38, 52, 48	3, 3, 6, 19, 41, 15
9	15	3	19, 40, 58, 48	3, 2, 53, 56, 12, 50, 22, 13, 20
18	2	8	19, 45, 11, 6, 40	3, 2, 15
3	10	9	19, 46, 31, 24, 22, 30	3, 2, 2, 40
35	3	0	19, 53, 2, 47, 17, 45, 36	3, 1, 2, 56, 47, 26, 13, 40, 53, 54, 22, 30
20	11	1	19, 54, 23, 36, 57, 36	3, 0, 50, 41, 40
5	19	2	19, 55, 44, 32, 6	3, 0, 38, 27, 22, 18, 38, 14, 39, 0, 44, 26, 40
14	6	7	20	3
8	1	13	20, 5, 37, 57, 46, 40	2, 59, 9, 32, 32, 38, 24
16	15	0	20, 9, 19, 24, 40, 19, 12	2, 58, 36, 44, 6, 54, 48, 53, 20
1	23	1	20, 10, 41, 20, 30, 4, 30	2, 58, 24, 38, 53, 8, 46, 39, 39, 16, 17, 13, 44, 41, 28, 53, 20
25	2	5	20, 13, 37, 46, 40	2, 57, 58, 42, 39, 22, 30
10	10	6	20, 15	2, 57, 46, 40
4	5	12	20, 20, 42, 11, 15	2, 56, 56, 49, 55, 12
21	6	4	20, 28, 48	2, 55, 46, 52, 30
6	14	5	20, 30, 11, 15	2, 55, 34, 58, 45, 55, 33, 20
15	1	10	20, 34, 34, 4, 26, 40	2, 54, 57, 36
0	9	11	20, 35, 57, 42, 53, 26, 15	2, 54, 45, 45, 36
32	2	2	20, 42, 45, 24, 16	2, 53, 48, 25, 43, 8, 22, 44, 3, 45
17	10	3	20, 44, 9, 36	2, 53, 36, 40
2	18	4	20, 45, 33, 53, 26, 15	2, 53, 24, 55, 4, 37, 5, 30, 51, 51, 6, 40
11	5	9	20, 50	2, 52, 48
5	0	15	20, 55, 52, 2, 41, 6, 40	2, 51, 59, 33, 38, 32, 3, 50, 24
28	6	1	20, 58, 17, 28, 19, 12	2, 51, 39, 40, 57, 25, 18, 45
13	14	2	20, 59, 42, 43, 12	2, 51, 28, 3, 57, 2, 13, 20
22	1	7	21, 4, 11, 51, 6, 40	2, 50, 51, 33, 45
7	9	8	21, 5, 37, 30	2, 50, 40
1	4	14	21, 11, 33, 56, 43, 7, 30	2, 49, 52, 9, 51, 23, 31, 12
24	10	0	21, 14, 1, 11, 25, 26, 24	2, 49, 32, 31, 33, 45
9	18	1	21, 15, 27, 30, 14, 24	2, 49, 21, 3, 9, 39, 58, 21, 14, 4, 26, 40

a	b	c	N	N <sup>-1</sup>
18	5	6	21, 20	2, 48, 45
3	13	7	21, 21, 26, 43, 7, 30	2, 48, 33, 34, 48, 53, 20
12	0	12	21, 26, 0, 29, 37, 46, 40	2, 47, 57, 41, 45, 36
5	22	0	21, 31, 24, 5, 52, 4, 48	2, 47, 15, 36, 27, 19, 28, 44, 40, 34, 1, 9, 8, 53, 20
29	1	4	21, 34, 32, 17, 46, 40	2, 46, 51, 17, 29, 24, 50, 37, 30
14	9	5	21, 36	2, 46, 40
8	4	11	21, 42, 5	2, 45, 53, 16, 48
25	5	3	21, 50, 43, 12	2, 44, 47, 41, 43, 7, 30
10	13	4	21, 52, 12	2, 44, 36, 32, 35, 33, 20
19	0	9	21, 56, 52, 20, 44, 26, 40	2, 44, 1, 30
4	8	10	21, 58, 21, 33, 45	2, 43, 50, 24
36	1	1	22, 5, 36, 25, 53, 4	2, 42, 56, 39, 6, 41, 36, 18, 48, 30, 56, 15
21	9	2	22, 7, 6, 14, 24	2, 42, 45, 37, 30
6	17	3	22, 8, 36, 9	2, 42, 34, 36, 38, 4, 46, 25, 11, 6, 40
15	4	8	22, 13, 20	2, 42
0	12	9	22, 14, 50, 19, 55, 18, 45	2, 41, 49, 2, 13, 20
32	5	0	22, 22, 10, 38, 12, 28, 48	2, 40, 55, 57, 8, 49, 58, 49, 41, 15
17	13	1	22, 23, 41, 34, 4, 48	2, 40, 45, 3, 42, 13, 20
2	21	2	22, 25, 12, 36, 6, 45	2, 40, 34, 10, 59, 49, 53, 59, 41, 20, 39, 30, 22, 13, 20
26	0	6	22, 28, 28, 38, 31, 6, 40	2, 40, 10, 50, 23, 26, 45
11	8	7	22, 30	2, 40
5	3	13	22, 36, 20, 12, 30	2, 39, 15, 8, 55, 40, 48
13	17	0	22, 40, 29, 20, 15, 21, 36	2, 38, 45, 59, 12, 48, 43, 27, 24, 26, 40
22	4	5	22, 45, 20	2, 38, 12, 11, 15
7	12	6	22, 46, 52, 30	2, 38, 1, 28, 53, 20
1	7	12	22, 53, 17, 27, 39, 22, 30	2, 37, 17, 11, 2, 24
33	0	3	23, 0, 50, 26, 57, 46, 40	2, 36, 25, 35, 8, 49, 32, 27, 39, 22, 30
18	8	4	23, 2, 24	2, 36, 15
3	16	5	23, 3, 57, 39, 22, 30	2, 36, 4, 25, 34, 9, 22, 57, 46, 40
12	3	10	23, 8, 53, 20	2, 35, 31, 12
29	4	2	23, 18, 6, 4, 48	2, 34, 29, 42, 51, 40, 46, 52, 30
14	12	3	23, 19, 40, 48	2, 34, 19, 15, 33, 20
8	7	9	23, 26, 15	2, 33, 36
2	2	15	23, 32, 51, 3, 1, 15	2, 32, 52, 56, 34, 15, 10, 4, 48
40	0	0	23, 33, 58, 51, 36, 36, 16	2, 32, 45, 36, 40, 1, 30, 17, 37, 59, 0, 14, 3
25	8	1	23, 35, 34, 39, 21, 36	2, 32, 35, 16, 24, 22, 30
10	16	2	23, 37, 10, 33, 36	2, 32, 24, 56, 50, 41, 58, 31, 6, 40
19	3	7	23, 42, 13, 20	2, 31, 52, 30

a	b	c	N	N <sup>-1</sup>
4	11	8	23,43,49,41,15	2,31,42,13,20
21	12	0	23,53,16,20,21,7,12	2,30,42,14,43,20
6	20	1	23,54,53,26,31,12	2,30,32,2,48,35,31,52,12,30,37,2,13,
15	7	6	24	2,30
0	15	7	24,1,37,33,30,56,15	2,29,49,50,56,47,24,26,40
9	2	12	24,6,45,33,20	2,29,17,57,7,12
2	24	0	24,12,49,36,36,5,24	2,28,40,32,24,17,18,53,2,43,34,21,27, 14,34,4,26,40
26	3	4	24,16,21,20	2,28,18,55,32,48,45
11	11	5	24,18	2,28,8,53,20
5	6	11	24,24,50,37,30	2,27,27,21,36
22	7	3	24,34,33,36	2,26,29,3,45
7	15	4	24,36,13,30	2,26,19,8,58,16,17,46,40
16	2	9	24,41,28,53,20	2,25,48
1	10	10	24,43,9,15,28,7,30	2,25,38,8
33	3	1	24,51,18,29,7,12	2,24,50,21,25,56,58,56,43,7,30
18	11	2	24,52,59,31,12	2,24,40,33,20
3	19	3	24,54,40,40,7,30	2,24,30,45,53,50,54,35,43,12,35,33,20
12	6	8	25	2,24
6	1	14	25,7,2,27,13,20	2,23,19,38,2,6,43,12
29	7	0	25,9,56,57,59,2,24	2,23,3,4,7,51,5,37,30
14	15	1	25,11,39,15,50,24	2,22,53,23,17,31,51,6,40
23	2	6	25,17,2,13,20	2,22,22,58,7,30
8	10	7	25,18,45	2,22,13,20
2	5	13	25,25,52,44,3,45	2,21,33,27,56,9,36
10	19	0	25,30,33,0,17,16,48	2,21,7,32,38,3,18,37,41,43,42,13,20
19	6	5	25,36	2,20,37,30
4	14	6	25,37,44,3,45	2,20,27,59,0,44,26,40
13	1	11	25,43,12,35,33,20	2,19,58,4,48
30	2	3	25,53,26,45,20	2,19,2,44,34,30,42,11,15
15	10	4	25,55,12	2,18,53,20
0	18	5	25,56,57,21,47,48,45	2,18,43,56,3,41,40,24,41,28,53,20
9	5	10	26,2,30	2,18,14,24
3	0	16	26,9,50,3,21,23,20	2,17,35,38,54,49,39,4,19,12
26	6	2	26,12,51,50,24	2,17,19,44,45,56,15
11	14	3	26,14,38,24	2,17,10,27,9,37,46,40
20	1	8	26,20,14,48,53,20	2,16,41,15
5	9	9	26,22,1,52,30	2,16,32
37	2	0	26,30,43,43,3,40,48	2,15,47,12,35,34,40,15,40,25,46,52,30
22	10	1	26,32,31,29,16,48	2,15,38,1,15

From the O. G. L. papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA



a	b	c	N	N <sup>-1</sup>	94
7	18	2	26,34,19,22,48	2,15,28,50,31,43,58,40,59,15,33,20	
16	5	7	26,40	2,15	
1	13	8	26,41,48,23,54,22,30	2,14,50,51,51,6,40	
10	0	13	26,47,30,37,2,13,20	2,14,22,9,24,28,48	
18	14	0	26,52,25,52,53,45,36	2,13,57,33,5,11,6,40	
3	22	1	26,54,15,7,20,6	2,13,48,29,9,51,34,59,44,27,12,55,18, 31,6,40	
27	1	5	26,58,10,22,13,20	2,13,29,1,59,31,52,30	
12	9	6	27	2,13,20	
6	4	12	27,7,36,15	2,12,42,37,26,24	
23	5	4	27,18,24	2,11,50,9,22,30	
8	13	5	27,20,15	2,11,41,14,4,26,40	
17	0	10	27,26,5,25,55,33,20	2,11,13,12	
2	8	11	27,27,56,57,11,15	2,11,4,19,12	
34	1	2	27,37,0,32,21,20	2,10,27,19,17,21,17,3,2,48,45	
19	9	3	27,38,52,48	2,10,12,30	
4	17	4	27,40,45,11,15	2,10,3,41,18,27,49,8,8,53,20	
13	4	9	27,46,40	2,9,36	
30	5	1	27,57,43,17,45,36	2,8,44,45,43,3,59,3,45	
15	13	2	27,59,36,57,36	2,8,36,2,57,46,40	
0	21	3	28,1,30,45,8,26,15	2,8,27,20,47,51,55,11,45,4,31,36,17, 46,40	
24	0	7	28,5,35,48,8,53,20	2,8,8,40,18,45	
9	8	8	28,7,30	2,8	
3	3	14	28,15,25,15,37,30	2,7,24,7,8,32,38,24	
26	9	0	28,18,41,35,13,55,12	2,7,9,23,40,18,45	
11	17	1	28,20,36,40,19,12	2,7,0,47,22,14,58,45,55,33,20	
20	4	6	28,26,40	2,6,33,45	
5	12	7	28,28,35,37,30	2,6,25,11,6,40	
7	21	0	28,41,52,7,49,26,24	2,5,26,42,20,29,36,33,30,25,30,51,51, 6,40	
31	0	4	28,46,3,3,42,13,20	2,5,8,28,7,3,37,58,7,30	
16	8	5	28,48	2,5	
1	16	6	28,49,57,4,13,7,30	2,4,51,32,27,19,30,22,13,20	
10	3	11	28,56,6,40	2,4,24,57,36	
27	4	3	29,7,37,36	2,3,35,46,17,20,37,30	
12	12	4	29,9,36	2,3,27,24,26,40	
6	7	10	29,17,48,45	2,2,52,48	
0	2	16	29,26,3,48,46,33,45	2,2,18,21,15,24,8,3,50,24	
38	0	1	29,27,28,34,30,45,20	2,2,12,29,20,1,12,14,6,23,12,11,15	

a	b	c	N	N <sup>-1</sup>
23	8	2	29,29,28,19,12	2, 2, 4,13, 7,30
8	16	3	29,31,28,12	2, 1,55,57,28,33,34,48,53,20
17	3	8	29,37,46,40	2, 1,30
2	11	9	29,39,47, 6,33,45	2, 1,21,46,40
34	4	0	29,49,34,10,56,38,24	2, 0,41,57,51,37,29, 7,15,56,15
19	12	1	29,51,35,25,26,24	2, 0,33,47,46,40
4	20	2	29,53,36,48, 9	2, 0,25,38,14,52,25,29,46, 0,29,37, 2
13	7	7	30	2
7	2	13	30, 8,26,56,40	1,59,26,21,41,45,36
15	16	0	30,13,59, 7, 0,28,48	1,59, 4,29,24,36,32,35,33,20
0	24	1	30,16, 2, 0,45, 6,45	1,58,56,25,55,25,51, 6,26,10,51,29, 47,39,15,33,20
24	3	5	30,20,26,40	1,58,39, 8,26,15
9	11	6	30,22,30	1,58,31, 6,40
3	6	12	30,31, 3,16,52,30	1,57,57,53,16,48
20	7	4	30,43,12	1,57,11,15
5	15	5	30,45,16,52,30	1,57, 3,19,10,37, 2,13,20
14	2	10	30,51,51, 6,40	1,56,38,24
31	3	2	31, 4, 8, 6,24	1,55,52,17, 8,45,35, 9,22,30
16	11	3	31, 6,14,24	1,55,44,26,40
1	19	4	31, 8,20,50, 9,22,30	1,55,36,36,43, 4,43,40,34,34, 4,26, 1,55,12
10	6	9	31,15	1,55,12
4	1	15	31,23,48, 4, 1,40	1,54,39,42,25,41,22,33,36
27	7	1	31,27,26,12,28,48	1,54,26,27,18,16,52,30
12	15	2	31,29,34, 4,48	1,54,18,42,38, 1,28,53,20
21	2	7	31,36,17,46,40	1,53,54,22,30
6	10	8	31,38,26,15	1,53,46,40
0	5	14	31,47,20,55, 4,41,15	1,53,14,46,20,55,40,48
23	11	0	31,51, 1,47, 8, 9,36	1,53, 1,41, 2,30
8	19	1	31,53,11,15,21,36	1,52,54, 2, 6,26,38,54, 9,22,57,46, 1,52,30
17	6	6	32	1,52,30
2	14	7	32, 2,10, 4,41,15	1,52,22,23,12,35,33,20
11	1	12	32, 9, 0,44,26,40	1,51,58,27,50,24
4	23	0	32,17, 6, 8,48, 7,12	1,51,30,24,18,12,59, 9,47, 2,40,46, 25,55,33,20
28	2	4	32,21,48,26,40	1,51,14,11,39,36,33,45
13	10	5	32,24	1,51, 6,40
7	5	11	32,33, 7,30	1,50,35,31,12
1	0	17	32,42,17,34,11,44,10	1,50, 4,31, 7,51,43,15,27,21,36
24	6	3	32,46, 4,48	1,49,51,47,48,45

From the Otto Neugebauer papers  
 Courtesy of The Center for Applied Mathematics and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
9	14	4	32,48,18	1,49,44,21,43,42,13,20
18	1	9	32,55,18,31,6,40	1,49,21
3	9	10	32,57,32,20,37,30	1,49,13,36
35	2	1	33,8,24,38,49,36	1,48,37,46,4,27,44,12,32,20,37,30
20	10	2	33,10,39,21,36	1,48,30,25
5	18	3	33,12,54,13,30	1,48,23,4,25,23,10,56,47,24,26,40
14	5	8	33,20	1,48
8	0	14	33,29,23,16,17,46,40	1,47,29,43,31,35,2,24
31	6	0	33,33,15,57,18,43,12	1,47,17,18,5,53,19,13,7,30
16	14	1	33,35,32,21,7,12	1,47,10,2,28,8,53,20
1	22	2	33,37,48,54,10,7,30	1,47,2,47,19,53,15,59,47,33,46,20,14, 48,53,20
25	1	6	33,42,42,57,46,40	1,46,47,13,35,37,30
10	9	7	33,45	1,46,40
4	4	13	33,54,30,18,45	1,46,10,5,57,7,12
12	18	0	34,0,44,0,23,2,24	1,45,50,39,28,32,28,58,16,17,46,40
21	5	5	34,8	1,45,28,7,30
6	13	6	34,10,18,45	1,45,20,59,15,33,20
15	0	11	34,17,36,47,24,26,40	1,44,58,33,36
0	8	12	34,19,56,11,29,3,45	1,44,51,27,21,36
32	1	3	34,31,15,40,26,40	1,44,17,3,25,53,1,38,26,15
17	9	4	34,33,36	1,44,10
2	17	5	34,35,56,29,3,45	1,44,2,57,2,46,15,18,31,6,40
11	4	10	34,43,20	1,43,40,48
28	5	2	34,57,9,7,12	1,42,59,48,34,27,11,15
13	13	3	34,59,31,12	1,42,52,50,22,13,20
22	0	8	35,6,59,45,11,6,40	1,42,30,56,15
7	8	9	35,9,22,30	1,42,24
1	3	15	35,19,16,34,31,52,30	1,41,55,17,42,50,6,43,12
39	1	0	35,20,58,17,24,54,24	1,41,50,24,26,41,0,11,45,19,20,9,22,
24	9	1	35,23,21,59,2,24	1,41,43,30,56,15
9	17	2	35,25,45,50,24	1,41,36,37,53,47,59,0,44,26,40
18	4	7	35,33,20	1,41,15
3	12	8	35,35,44,31,52,30	1,41,8,8,53,20
20	13	0	35,49,54,30,31,40,48	1,40,28,9,48,53,20
5	21	1	35,52,20,9,46,48	1,40,21,21,52,23,41,14,48,20,24,41,28, 53,20
29	0	5	35,57,33,49,37,46,40	1,40,6,46,29,38,54,22,30
14	8	6	36	1,40
8	3	12	36,10,8,20	1,39,31,58,4,48

a	b	c	N	N <sup>-1</sup>
1	25	0	36, 19, 14, 24, 54, 8, 6	1, 39, 7, 1, 36, 11, 32, 35, 21, 49, 2, 54, 18, 9, 42, 42, 57, 46, 40
25	4	4	36, 24, 32	1, 38, 52, 37, 1, 52, 30
10	12	5	36, 27	1, 38, 45, 55, 33, 20
4	7	11	36, 37, 15, 56, 15	1, 38, 18, 14, 24
36	0	2	36, 49, 20, 43, 8, 26, 40	1, 37, 45, 59, 28, 0, 57, 47, 17, 6, 33, 45
21	8	3	36, 51, 50, 24	1, 37, 39, 22, 30
6	16	4	36, 54, 20, 15	1, 37, 32, 45, 58, 50, 51, 51, 6, 40
15	3	9	37, 2, 13, 20	1, 37, 12
0	11	10	37, 4, 43, 53, 12, 11, 15	1, 37, 5, 25, 20
32	4	1	37, 16, 57, 43, 40, 48	1, 36, 33, 34, 17, 17, 59, 17, 48, 45
17	12	2	37, 19, 29, 16, 48	1, 36, 27, 2, 13, 20
2	20	3	37, 22, 1, 0, 11, 15	1, 36, 20, 30, 35, 53, 56, 23, 48, 48, 23, 42, 13,
11	7	8	37, 30	1, 36
5	2	14	37, 40, 33, 40, 50	1, 35, 33, 5, 21, 24, 28, 48
28	8	0	37, 44, 55, 26, 58, 33, 36	1, 35, 22, 2, 45, 14, 3, 45
13	16	1	37, 47, 28, 53, 45, 36	1, 35, 15, 35, 31, 41, 14, 4, 26, 40
22	3	6	37, 55, 33, 20	1, 34, 55, 18, 45
7	11	7	37, 58, 7, 30	1, 34, 48, 53, 20
1	6	13	38, 8, 49, 6, 5, 37, 30	1, 34, 22, 18, 37, 26, 24
9	20	0	38, 15, 49, 30, 25, 55, 12	1, 34, 5, 1, 45, 22, 12, 25, 7, 49, 8, 8, 53
18	7	5	38, 24	1, 33, 45
3	15	6	38, 26, 36, 5, 37, 30	1, 33, 38, 39, 20, 29, 37, 46, 40
12	2	11	38, 34, 48, 53, 20	1, 33, 18, 43, 12
29	3	3	38, 50, 10, 8	1, 32, 41, 49, 43, 0, 28, 7, 30
14	14	4	38, 52, 48	1, 32, 35, 33, 20
8	6	10	39, 3, 45	1, 32, 9, 36
2	1	16	39, 14, 45, 5, 2, 5	1, 31, 43, 45, 56, 33, 6, 2, 52, 48
25	7	2	39, 19, 17, 45, 36	1, 31, 33, 9, 50, 37, 30
10	15	3	39, 21, 57, 36	1, 31, 26, 58, 6, 25, 11, 6, 40
19	2	8	39, 30, 22, 13, 20	1, 31, 7, 30
4	10	9	39, 33, 2, 48, 45	1, 31, 1, 20
36	3	0	39, 46, 5, 34, 35, 31, 12	1, 30, 31, 28, 23, 43, 6, 50, 26, 57, 11, 15
21	11	1	39, 48, 47, 13, 55, 12	1, 30, 25, 20, 50
6	19	2	39, 51, 29, 4, 12	1, 30, 19, 13, 41, 9, 19, 7, 19, 30, 22, 13, 20
15	6	7	40	1, 30
0	14	8	40, 2, 42, 35, 51, 33, 45	1, 29, 53, 54, 34, 4, 26, 40
9	1	13	40, 11, 15, 55, 33, 20	1, 29, 34, 46, 16, 19, 12
17	15	0	40, 18, 38, 49, 20, 38, 24	1, 29, 18, 22, 3, 27, 24, 26, 40
2	23	1	40, 21, 22, 41, 0, 9	1, 29, 12, 19, 26, 34, 23, 19, 49, 38, 8, 36, 5,
				20, 44, 26, 40

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>-1</sup>
26	2	5	40, 27, 15, 33, 20	1, 28, 59, 21, 19, 41, 15
11	10	6	40, 30	1, 28, 53, 20
5	5	12	40, 41, 24, 22, 30	1, 28, 28, 24, 57, 36
22	6	4	40, 57, 36	1, 27, 53, 26, 15
7	14	5	41, 0, 22, 30	1, 27, 47, 29, 22, 57, 46, 40
16	1	10	41, 9, 8, 8, 53, 20	1, 27, 28, 48
1	9	11	41, 11, 55, 25, 46, 52, 30	1, 27, 22, 52, 48
33	2	2	41, 25, 30, 48, 32	1, 26, 54, 12, 51, 34, 11, 22, 1, 52, 30
18	10	3	41, 28, 19, 12	1, 26, 48, 20
3	18	4	41, 31, 7, 46, 52, 30	1, 26, 42, 27, 32, 18, 32, 45, 25, 55, 33, 20
12	5	9	41, 40	1, 26, 24
6	0	15	41, 51, 44, 5, 22, 13, 20	1, 25, 59, 46, 49, 16, 1, 55, 12
29	6	1	41, 56, 34, 56, 38, 24	1, 25, 49, 50, 28, 42, 39, 22, 30
14	14	2	41, 59, 25, 26, 24	1, 25, 44, 1, 58, 31, 6, 40
23	1	7	42, 8, 23, 42, 13, 20	1, 25, 25, 46, 52, 30
8	9	8	42, 11, 15	1, 25, 20
2	4	14	42, 23, 7, 53, 26, 15	1, 24, 56, 4, 45, 41, 45, 36
25	10	0	42, 28, 2, 22, 50, 52, 48	1, 24, 46, 15, 46, 52, 30
10	18	1	42, 30, 55, 0, 28, 48	1, 24, 40, 31, 34, 49, 59, 10, 37, 2, 13, 20
19	5	6	42, 40	1, 24, 22, 30
4	13	7	42, 42, 53, 26, 15	1, 24, 16, 47, 24, 26, 40
13	0	12	42, 52, 0, 59, 15, 33, 20	1, 23, 58, 50, 52, 48
6	22	0	43, 2, 48, 11, 44, 9, 36	1, 23, 37, 48, 13, 39, 44, 22, 20, 17, 0, 34, 34 4, 26, 40
30	1	4	43, 9, 4, 35, 33, 20	1, 23, 25, 38, 44, 42, 25, 18, 45
15	9	5	43, 12	1, 23, 20
0	17	6	43, 14, 55, 36, 19, 41, 15	1, 23, 14, 21, 38, 13, 0, 14, 48, 53, 20
9	4	11	43, 24, 10	1, 22, 56, 38, 24
26	5	3	43, 41, 26, 24	1, 22, 23, 50, 51, 33, 45
11	13	4	43, 44, 24	1, 22, 18, 16, 17, 46, 40
20	0	9	43, 53, 44, 41, 28, 53, 20	1, 22, 0, 45
5	8	10	43, 56, 43, 7, 30	1, 21, 55, 12
37	1	1	44, 11, 12, 51, 46, 8	1, 21, 28, 19, 33, 20, 48, 9, 24, 15, 28, 7, 3
22	9	2	44, 14, 12, 28, 48	1, 21, 22, 48, 45
7	17	3	44, 17, 12, 18	1, 21, 17, 18, 19, 2, 23, 12, 35, 33, 20
16	4	8	44, 26, 40	1, 21
1	12	9	44, 29, 40, 39, 50, 37, 30	1, 20, 54, 31, 6, 40
33	5	0	44, 44, 21, 16, 24, 57, 36	1, 20, 27, 58, 34, 24, 59, 24, 50, 37, 30
18	13	1	44, 47, 23, 8, 9, 36	1, 20, 22, 31, 51, 6, 40
3	21	2	44, 50, 25, 12, 13, 30	1, 20, 17, 5, 29, 54, 56, 59, 50, 40, 19, 45, 1 6, 40

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ

a	b	c	N	$N^{-1}$
27	0	6	44, 56, 57, 17, 2, 13, 20	1, 20, 5, 25, 11, 43, 22, 30
12	8	7	45	1, 20
6	3	13	45, 12, 40, 25	1, 19, 37, 34, 27, 50, 24
14	17	0	45, 20, 58, 40, 30, 43, 12	1, 19, 22, 59, 36, 24, 21, 43, 42, 13, 20
23	4	5	45, 30, 40	1, 19, 6, 5, 37, 30
8	12	6	45, 33, 45	1, 19, 0, 44, 26, 40
2	7	12	45, 46, 34, 55, 18, 45	1, 18, 38, 35, 31, 12
34	0	3	46, 1, 40, 53, 55, 33, 20	1, 18, 12, 47, 34, 24, 46, 13, 49, 41, 15
19	8	4	46, 4, 48	1, 18, 7, 30
4	16	5	46, 7, 55, 18, 45	1, 18, 2, 12, 47, 4, 41, 28, 53, 20
13	3	10	46, 17, 46, 40	1, 17, 45, 36
30	4	2	46, 36, 12, 9, 36	1, 17, 14, 51, 25, 50, 23, 26, 15
15	12	3	46, 39, 21, 36	1, 17, 9, 37, 46, 40
0	20	4	46, 42, 31, 15, 14, 3, 45	1, 17, 4, 24, 28, 43, 9, 7, 3, 2, 42, 57,
9	7	9	46, 52, 30	1, 16, 48
3	2	15	47, 5, 42, 6, 2, 30	1, 16, 26, 28, 17, 7, 35, 2, 24
41	0	0	47, 7, 57, 43, 13, 12, 32	1, 16, 22, 48, 20, 0, 45, 8, 48, 59, 30, 7, 52, 30
26	8	1	47, 11, 9, 18, 43, 12	1, 16, 17, 38, 12, 11, 15
11	16	2	47, 14, 21, 7, 12	1, 16, 12, 28, 25, 20, 59, 15, 33, 20
20	3	7	47, 24, 26, 40	1, 15, 56, 15
5	11	8	47, 27, 39, 22, 30	1, 15, 51, 6, 40
22	12	0	47, 46, 32, 40, 42, 14, 24	1, 15, 21, 7, 21, 40
7	20	1	47, 49, 46, 53, 2, 24	1, 15, 16, 1, 24, 17, 45, 56, 6, 15, 18, 31,
16	7	6	48	1, 15
1	15	7	48, 3, 15, 7, 1, 52, 30	1, 14, 54, 55, 28, 23, 42, 13, 20
10	2	12	48, 13, 31, 6, 40	1, 14, 38, 58, 33, 36
3	24	0	48, 25, 39, 13, 12, 10, 48	1, 14, 20, 16, 12, 8, 39, 26, 31, 21, 47, 10, 37, 17, 2, 13, 20
27	3	4	48, 32, 42, 40	1, 14, 9, 27, 46, 24, 22, 30
12	11	5	48, 36	1, 14, 4, 26, 40
6	6	11	48, 49, 41, 15	1, 13, 43, 40, 48
0	1	17	49, 3, 26, 21, 17, 36, 15	1, 13, 23, 0, 45, 14, 28, 50, 18, 14, 24
23	7	3	49, 9, 7, 12	1, 13, 14, 31, 52, 30
8	15	4	49, 12, 27	1, 13, 9, 34, 29, 8, 8, 53, 20
17	2	9	49, 22, 57, 46, 40	1, 12, 54
2	10	10	49, 26, 18, 30, 56, 15	1, 12, 49, 4
34	3	1	49, 42, 36, 58, 14, 24	1, 12, 25, 10, 42, 58, 29, 28, 21, 33, 45
19	11	2	49, 45, 59, 2, 24	1, 12, 20, 16, 40
4	19	3	49, 49, 21, 20, 15	1, 12, 15, 22, 56, 55, 27, 17, 51, 36, 17, 46
13	6	8	50	1, 12

a	b	c	N	N <sup>-1</sup>
7	1	14	50,14, 4,54,26,40	1,11,39,49, 1, 3,21,36
30	7	0	50,19,53,55,58, 4,48	1,11,31,32, 3,55,32,48,45
15	15	1	50,23,18,31,40,48	1,11,26,41,38,45,55,33,20
0	23	2	50,26,43,21,15,11,15	1,11,21,51,33,15,30,39,51,42,30,53,29, 52,35,33,20
24	2	6	50,34, 4,26,40	1,11,11,29, 3,45
9	10	7	50,37,30	1,11, 6,40
3	5	13	50,51,45,28, 7,30	1,10,46,43,58, 4,48
11	19	0	51, 1, 6, 0,34,33,36	1,10,33,46,19, 1,39,18,50,51,51, 6,40
20	6	5	51,12	1,10,18,45
5	14	6	51,15,28, 7,30	1,10,13,59,30,22,13,20
14	1	11	51,26,25,11, 6,40	1, 9,59, 2,24
31	2	3	51,46,53,30,40	1, 9,31,22,17,15,21, 5,37,30
16	10	4	51,50,24	1, 9,26,40
1	18	5	51,53,54,43,25,37,30	1, 9,21,58, 1,50,50,12,20,44,26,40
10	5	10	52, 5	1, 9, 7,12
4	0	16	52,19,40, 6,42,46,40	1, 8,47,49,27,24,49,32, 9,36
27	6	2	52,25,43,40,48,	1, 8,39,52,22,58, 7,30
12	14	3	52,29,16,48	1, 8,35,13,34,48,53,20
21	1	8	52,40,29,37,46,40	1, 8,20,37,30
6	9	9	52,44, 3,45	1, 8,16
0	4	15	52,58,54,51,47,48,45	1, 7,56,51,48,33,24,28,48
38	2	0	53, 1,27,26, 7,21,36	1, 7,53,36,17,47,20, 7,50,12,53,26,15
23	10	1	53, 5, 2,58,33,36	1, 7,49, 0,37,30
8	18	2	53, 8,38,45,36	1, 7,44,25,15,51,59,20,29,37,46,40
17	5	7	53,20	1, 7,30
2	13	8	53,23,36,47,48,45	1, 7,25,25,55,33,20
11	0	13	53,35, 1,14, 4,26,40	1, 7,11, 4,42,14,24
19	14	0	53,44,51,45,47,31,12	1, 6,58,46,32,35,33,20
4	22	1	53,48,30,14,40,12	1, 6,54,14,34,55,47,29,52,13,36,27,39, 15,33,20
28	1	5	53,56,20,44,26,40	1, 6,44,30,59,45,56,15
13	9	6	54	1, 6,40
7	4	12	54,15,12,30	1, 6,21,18,43,12
0	26	0	54,28,51,37,21,12, 9	1, 6, 4,41, 4, 7,41,43,34,32,41,56,12, 6,28,28,38,31, 6,40
24	5	4	54,36,48	1, 5,55, 4,41,15
9	13	5	54,40,30	1, 5,50,37, 2,13,20
18	0	10	54,52,10,51,51, 6,40	1, 5,36,36
3	8	11	54,55,53,54,22,30	1, 5,32, 9,36

a	b	c	N	N <sup>-1</sup>
35	1	2	55, 14, 1, 4, 42, 40	1, 5, 10, 39, 38, 40, 38, 31, 31, 24, 22, 30
20	9	3	55, 17, 45, 36	1, 5, 6, 15
5	17	4	55, 21, 30, 22, 30	1, 5, 1, 50, 39, 13, 54, 34, 4, 26, 40
14	4	9	55, 33, 20	1, 4, 48
31	5	1	55, 55, 26, 35, 31, 12	1, 4, 22, 22, 51, 31, 59, 31, 52, 30
16	13	2	55, 59, 13, 55, 12	1, 4, 18, 1, 28, 53, 20
1	21	3	56, 3, 1, 30, 16, 52, 30	1, 4, 13, 40, 23, 55, 57, 35, 52, 32, 15, 48, 8, 53, 20
25	0	7	56, 11, 11, 36, 17, 46, 40	1, 4, 4, 20, 9, 22, 30
10	8	8	56, 15	1, 4
4	3	14	56, 30, 50, 31, 15	1, 3, 42, 3, 34, 16, 19, 12
27	9	0	56, 37, 23, 10, 27, 50, 24	1, 3, 34, 41, 50, 9, 22, 30
12	17	1	56, 41, 13, 20, 38, 24	1, 3, 30, 23, 41, 7, 29, 22, 57, 46, 40
21	4	6	56, 53, 20	1, 3, 16, 52, 30
6	12	7	56, 57, 11, 15	1, 3, 12, 35, 33, 20
0	7	13	57, 13, 13, 39, 8, 26, 15	1, 2, 54, 52, 24, 57, 36
8	21	0	57, 23, 44, 15, 38, 52, 48	1, 2, 43, 21, 10, 14, 48, 16, 45, 12, 45, 25, 55, 33, 20
32	0	4	57, 32, 6, 7, 24, 26, 40	1, 2, 34, 14, 3, 31, 48, 59, 3, 45
17	8	5	57, 36	1, 2, 30
2	16	6	57, 39, 54, 8, 26, 15	1, 2, 25, 46, 13, 39, 45, 11, 6, 40
11	3	11	57, 52, 13, 20	1, 2, 12, 28, 48
28	4	3	58, 15, 15, 12	1, 1, 47, 53, 8, 40, 18, 45
13	12	4	58, 19, 12	1, 1, 43, 42, 13, 20
7	7	10	58, 35, 37, 30	1, 1, 26, 24
1	2	16	58, 52, 7, 37, 33, 7, 30	1, 1, 9, 10, 37, 42, 4, 1, 55, 12
39	0	1	58, 54, 57, 9, 1, 30, 40	1, 1, 6, 14, 40, 0, 36, 7, 3, 11, 36, 5, 37, 3
24	8	2	58, 58, 56, 38, 24	1, 1, 2, 6, 33, 45
9	16	3	59, 2, 56, 24	1, 0, 57, 58, 44, 16, 47, 24, 26, 40
18	3	8	59, 15, 33, 20	1, 0, 45
3	11	9	59, 19, 34, 13, 7, 30	1, 0, 40, 53, 20
35	4	0	59, 39, 8, 21, 53, 16, 48	1, 0, 20, 58, 55, 48, 44, 33, 37, 58, 7, 30
20	12	1	59, 43, 10, 50, 52, 48	1, 0, 16, 53, 53, 20
5	20	2	59, 47, 13, 36, 18	1, 0, 12, 49, 7, 26, 12, 44, 53, 0, 14, 48, 53, 2



II.

Quadratzahl-Tafel.

Quadrate der Zahlen n von 1 bis 59.

n	n <sup>2</sup>	n	n <sup>2</sup>
1	1	31	16, 1
2	4	32	17, 4
3	9	33	18, 9
4	16	34	19, 16
5	25	35	20, 25
6	36	36	21, 36
7	49	37	22, 49
8	1, 4	38	24, 4
9	1, 21	39	25, 21
10	1, 40	40	26, 40
11	2, 1	41	28, 1
12	2, 24	42	29, 24
13	2, 49	43	30, 49
14	3, 16	44	32, 16
15	3, 45	45	33, 45
16	4, 16	46	35, 16
17	4, 49	47	36, 49
18	5, 24	48	38, 24
19	6, 1	49	40, 1
20	6, 40	50	41, 40
21	7, 21	51	43, 21
22	8, 4	52	45, 4
23	8, 49	53	46, 49
24	9, 36	54	48, 36
25	10, 25	55	50, 25
26	11, 16	56	52, 16
27	12, 9	57	54, 9
28	13, 4	58	56, 4
29	14, 1	59	58, 1
30	15		

106

B. Quadrate der Zahlen N.

Nullte Ordnung.

a	b	c	N	N <sup>2</sup>	a	b	c	N	N <sup>2</sup>	104
0	0	0	1	1	2	0	1	20	6,40	
1	0	0	2	4	3	1	0	24	9,36	
0	1	0	3	9	0	0	2	25	10,25	
2	0	0	4	16	0	3	0	27	12, 9	
0	0	1	5	25	1	1	1	30	15	
1	1	0	6	36	5	0	0	32	17, 4	
3	0	0	8	1, 4	2	2	0	36	21,36	
0	2	0	9	1,21	3	0	1	40	26,40	
1	0	1	10	1,40	0	2	1	45	33,45	
2	1	0	12	2,24	4	1	0	48	38,24	
0	1	1	15	3,45	1	0	2	50	41,40	
4	0	0	16	4,16	1	3	0	54	48,36	
1	2	0	18	5,24						

I. Ordnung.

a	b	c	N	N <sup>2</sup>	a	b	c	N	N <sup>2</sup>
2	1	1	1	1	4	2	0	2,24	5,45,36
6	0	0	1, 4	1, 8,16	1	1	2	2,30	6,15
3	2	0	1,12	1,26,24	5	0	1	2,40	7, 6,40
0	1	2	1,15	1,33,45	1	4	0	2,42	7,17,24
4	0	1	1,20	1,46,40	2	2	1	3	9
0	4	0	1,21	1,49,21	6	1	0	3,12	10,14,24
1	2	1	1,30	2,15	3	0	2	3,20	11, 6,40
5	1	0	1,36	2,33,36	3	3	0	3,36	12,57,36
2	0	2	1,40	2,46,40	0	2	2	3,45	14, 3,45
2	3	0	1,48	3,14,24	4	1	1	4	16
3	1	1	2	4	0	5	0	4, 3	16,24, 9
0	0	3	2, 5	4,20,25	1	0	3	4,10	17,21,40
7	0	0	2, 8	4,33, 4	8	0	0	4,16	18,12,16
0	3	1	2,15	5, 3,45	1	3	1	4,30	20,15
					5	2	0	4,48	23, 2,24

From the Otto Neugebauer papers  
 Courtesy of The Sheby White & Leon Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>2</sup>	a	b	c	N	N <sup>2</sup>	108
2	1	2	5	25	0	5	1	20,15	6,50, 3,45	
6	0	1	5,20	28,26,40	1	0	4	20,50	7,14, 1,40	
2	4	0	5,24	29, 9,36	8	0	1	21,20	7,35, 6,40	
3	2	1	6	36	4	4	0	21,36	7,46,33,36	
0	1	3	6,15	39, 3,45	1	3	2	22,30	8,26,15	
7	1	0	6,24	40,57,36	5	2	1	24	9,36	
4	0	2	6,40	44,26,40	1	6	0	24,18	9,50,29,24	
0	4	1	6,45	45,33,45	2	1	3	25	10,25	
4	3	0	7,12	51,50,24	9	1	0	25,36	10,55,21,36	
1	2	2	7,30	56,15	6	0	2	26,40	11,51, 6,40	
5	1	1	8	1, 4	2	4	1	27	12, 9	
1	5	0	8, 6	1, 5,36,36	6	3	0	28,48	13,49,26,24	
2	0	3	8,20	1, 9,26,40	3	2	2	30	15	
9	0	0	8,32	1,12,49, 4	0	1	4	31,15	16,16,33,45	
2	3	1	9	1,21	7	1	1	32	17, 4	
6	2	0	9,36	1,32, 9,36	3	5	0	32,24	17,29,45,36	
3	1	2	10	1,40	4	0	3	33,20	18,31, 6,40	
0	0	4	10,25	1,48,30,25	0	4	2	33,45	18,59, 3,45	
7	0	1	10,40	1,53,46,40	11	0	0	34, 8	19,25, 5, 4	
3	4	0	10,48	1,56,38,24	4	3	1	36	21,36	
0	3	2	11,15	2, 6,33,45	0	7	0	36,27	22, 8,36, 9	
4	2	1	12	2,24	1	2	3	37,30	23,26,15	
0	6	0	12, 9	2,27,37,21	8	2	0	38,24	24,34,33,36	
1	1	3	12,30	2,36,15	5	1	2	40	26,40	
8	1	0	12,48	2,43,50,24	1	5	1	40,30	27,20,15	
5	0	2	13,20	2,57,46,40	2	0	4	41,40	28,56, 6,40	
1	4	1	13,30	3, 2,15	9	0	1	42,40	30,20,26,40	
5	3	0	14,24	3,27,21,36	5	4	0	43,12	31, 6,14,24	
2	2	2	15	3,45	2	3	2	45	33,45	
6	1	1	16	4,16	6	2	1	48	38,24	
2	5	0	16,12	4,22,26,24	2	6	0	48,36	39,21,57,36	
3	0	3	16,40	4,37,46,40	3	1	3	50	41,40	
10	0	0	17, 4	4,51,16,16	10	1	0	51,12	43,41,26,24	
3	3	1	18	5,24	0	0	5	52, 5	45,12,40,25	
0	2	3	18,45	5,51,33,45	7	0	2	53,20	47,24,26,40	
7	2	0	19,12	6, 8,38,24	3	4	1	54	48,36	
4	1	2	20	6,40	0	3	3	56,15	52,44, 3,45	
					7	3	0	57,36	55,17,45,36	

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

II. O r d n u n g .

a	b	c	N	N <sup>2</sup>
4	2	2	1	1
0	6	1	1, 0, 45	1, 1, 30, 33, 45
1	1	4	1, 2, 30	1, 5, 6, 15
8	1	1	1, 4	1, 8, 16
4	5	0	1, 4, 48	1, 9, 59, 2, 24
5	0	3	1, 6, 40	1, 14, 4, 26, 40
1	4	2	1, 7, 30	1, 15, 56, 15
12	0	0	1, 8, 16	1, 17, 40, 20, 16
5	3	1	1, 22	1, 26, 24
1	7	0	1, 12, 54	1, 28, 34, 24, 36
2	2	3	1, 15	1, 33, 45
9	2	0	1, 16, 48	1, 38, 18, 14, 24
6	1	2	1, 20	1, 46, 40
2	5	1	1, 21	1, 49, 21
3	0	4	1, 23, 20	1, 55, 44, 26, 40
10	0	1	1, 25, 20	2, 1, 21, 46, 40
6	4	0	1, 26, 24	2, 4, 24, 57, 36
3	3	2	1, 30	2, 15
0	2	4	1, 33, 45	2, 26, 29, 3, 45
7	2	1	1, 36	2, 33, 36
3	6	0	1, 37, 12	2, 37, 27, 50, 24
4	1	3	1, 40	2, 46, 40
0	5	2	1, 41, 15	2, 50, 51, 33, 45
11	1	0	1, 42, 24	2, 54, 45, 45, 36
1	0	5	1, 44, 10	3, 0, 50, 41, 40
8	0	2	1, 46, 40	3, 9, 37, 46, 40
4	4	1	1, 48	3, 14, 24
0	8	0	1, 49, 21	3, 19, 17, 25, 21
1	3	3	1, 52, 30	3, 30, 56, 15
8	3	0	1, 55, 12	3, 41, 11, 2, 24
5	2	2	2	4
1	6	1	2, 1, 30	4, 6, 12, 15
2	1	4	2, 5	4, 20, 25
9	1	1	2, 8	4, 33, 4
5	5	0	2, 9, 36	4, 39, 56, 9, 36
6	0	3	2, 13, 20	4, 56, 17, 46, 40
2	4	2	2, 15	5, 3, 45

From the Otto Neugebauer papers  
 Courtesy of the Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>2</sup>
13	0	0	2,16,32	5,10,41,21, 4
6	3	1	2,24	5,45,36
2	7	0	2,25,48	5,54,17,38,24
3	2	3	2,30	6,15
10	2	0	2,33,36	6,33,12,57,36
0	1	5	2,36,15	6,46,54, 3,45
7	1	2	2,40	7, 6,40
3	5	1	2,42	7,17,24
4	0	4	2,46,40	7,42,57,46,40
0	4	3	2,48,45	7,54,36,33,45
11	0	1	2,50,40	8, 5,27, 6,40
7	4	0	2,52,48	8,17,39,50,24
4	3	2	3	9
0	7	1	3, 2,15	9,13,35, 3,45
1	2	4	3, 7,30	9,45,56,15
8	2	1	3,12	10,14,24
4	6	0	3,14,24	10,29,51,21,36
5	1	3	3,20	11, 6,40
1	5	2	3,22,30	11,23,26,15
12	1	0	3,24,48	11,39, 3, 2,24
2	0	5	3,28,20	12, 3,22,46,40
9	0	2	3,33,20	12,38,31, 6,40
5	4	1	3,36	12,57,36
1	8	0	3,38,42	13,17, 9,41,24
2	3	3	3,45	14, 3,45
9	3	0	3,50,24	14,44,44, 9,36
6	2	2	4	16
2	6	1	4, 3	16,24, 9
3	1	4	4,10	17,21,40
10	1	1	4,16	18,12,16
6	5	0	4,19,12	18,39,44,38,24
0	0	6	4,20,25	18,50,16,50,25
7	0	3	4,26,40	19,45,11, 6,40
3	4	2	4,30	20,15
14	0	0	4,33, 4	20,42,45,24,16
0	3	4	4,41,15	21,58,21,33,45
7	3	1	4,48	23, 2,24
3	7	0	4,51,36	23,37,10,33,36
4	2	3	5	25
0	6	2	5, 3,45	25,37,44, 3,45

a	b	c	N	N <sup>2</sup>
11	2	0	5, 7, 12	26, 12, 51, 50, 24
1	1	5	5, 12, 30	27, 7, 36, 15
8	1	2	5, 20	28, 26, 40
4	5	1	5, 24	29, 9, 36
0	9	0	5, 28, 3	29, 53, 36, 48, 9
5	0	4	5, 33, 20	30, 51, 51, 6, 40
1	4	3	5, 37, 30	31, 38, 26, 15
12	0	1	5, 41, 20	32, 21, 48, 26, 40
8	4	0	5, 45, 36	33, 10, 39, 21, 36
5	3	2	6	36
1	7	1	6, 4, 30	36, 54, 20, 15
2	2	4	6, 15	39, 3, 45
9	2	1	6, 24	40, 57, 36
5	6	0	6, 28, 48	41, 59, 25, 26, 24
6	1	3	6, 40	44, 26, 40
2	5	2	6, 45	45, 33, 45
13	1	0	6, 49, 36	46, 36, 12, 9, 36
3	0	5	6, 56, 40	48, 13, 31, 6, 40
10	0	2	7, 6, 40	50, 34, 4, 26, 40
6	4	1	7, 12	51, 50, 24
2	8	0	7, 17, 24	53, 8, 38, 45, 36
3	3	3	7, 30	56, 15
10	3	0	7, 40, 48	58, 58, 56, 38, 24
0	2	5	7, 48, 45	1, 1, 2, 6, 33, 45
7	2	2	8	1, 4
3	6	1	8, 6	1, 5, 36, 36
4	1	4	8, 20	1, 9, 26, 40
0	5	3	8, 26, 15	1, 11, 11, 29, 3, 45
11	1	1	8, 32	1, 12, 49, 4
7	5	0	8, 38, 24	1, 14, 38, 58, 33, 36
1	0	6	8, 40, 50	1, 15, 21, 7, 21, 40
8	0	3	8, 53, 20	1, 19, 0, 44, 26, 40
4	4	2	9	1, 21
15	0	0	9, 6, 8	1, 22, 51, 1, 37, 4
0	8	1	9, 6, 45	1, 23, 2, 15, 33, 45
1	3	4	9, 22, 30	1, 27, 53, 26, 15
8	3	1	9, 36	1, 32, 9, 36
4	7	0	9, 43, 12	1, 34, 28, 42, 14, 24
5	2	3	10	1, 40
1	6	2	10, 7, 30	1, 42, 30, 56, 15

a	b	c	N	N <sup>2</sup>
12	2	0	10, 14, 24	1, 44, 51, 27, 21, 36
2	1	5	10, 25	1, 48, 30, 25
9	1	2	10, 40	1, 53, 46, 40
5	5	1	10, 48	1, 56, 38, 24
1	9	0	10, 56, 6	1, 59, 34, 27, 12, 36
6	0	4	11, 6, 40	2, 3, 27, 24, 26, 40
2	4	3	11, 15	2, 6, 33, 45
13	0	1	11, 22, 40	2, 9, 27, 13, 46, 40
9	4	0	11, 31, 12	2, 12, 42, 37, 26, 24
6	3	2	12	2, 24
2	7	1	12, 9	2, 27, 37, 21
3	2	4	12, 30	2, 36, 15
10	2	1	12, 48	2, 43, 50, 24
6	6	0	12, 57, 36	2, 47, 57, 41, 45, 36
0	1	6	13, 1, 15	2, 49, 32, 31, 33, 45
7	1	3	13, 20	2, 57, 46, 40
3	5	2	13, 30	3, 2, 15
14	1	0	13, 39, 12	3, 6, 24, 48, 38, 24
4	0	5	13, 53, 20	3, 12, 54, 4, 26, 40
0	4	4	14, 3, 45	3, 17, 45, 14, 3, 45
11	0	2	14, 13, 20	3, 22, 16, 17, 46, 40
7	4	1	14, 24	3, 27, 21, 36
3	8	0	14, 34, 48	3, 32, 34, 35, 2, 24
4	3	3	15	3, 45
0	7	2	15, 11, 15	3, 50, 39, 36, 33, 45
11	3	0	15, 21, 36	3, 55, 55, 46, 33, 36
1	2	5	15, 37, 30	4, 4, 8, 26, 15
8	2	2	16	4, 16
4	6	1	16, 12	4, 22, 26, 24
0	10	0	16, 24, 9	4, 29, 2, 31, 13, 21
5	1	4	16, 40	4, 37, 46, 40
1	5	3	16, 52, 30	4, 44, 45, 56, 15
12	1	1	17, 4	4, 51, 16, 16
8	5	0	17, 16, 48	4, 58, 35, 54, 14, 24
2	0	6	17, 21, 40	5, 1, 24, 29, 26, 40
9	0	3	17, 46, 40	5, 16, 2, 57, 46, 40
5	4	2	18	5, 24
16	0	0	18, 12, 16	5, 31, 24, 6, 28, 16
1	8	1	18, 13, 30	5, 32, 9, 2, 15
2	3	4	18, 45	5, 51, 33, 45



a	b	c	N	N <sup>2</sup>
9	3	1	19, 12	6, 8, 38, 24
5	7	0	19, 26, 24	6, 17, 54, 48, 57, 36
6	2	3	20	6, 40
2	6	2	20, 15	6, 50, 3, 45
13	2	0	20, 28, 48	6, 59, 25, 49, 26, 24
3	1	5	20, 50	7, 14, 1, 40
10	1	2	21, 20	7, 35, 6, 40
6	5	1	21, 36	7, 46, 33, 36
0	0	7	21, 42, 5	7, 50, 57, 1, 0, 25
2	9	0	21, 52, 12	7, 58, 17, 48, 50, 24
7	0	4	22, 13, 20	8, 13, 49, 37, 46, 40
3	4	3	22, 30	8, 26, 15
14	0	1	22, 45, 20	8, 37, 48, 55, 6, 40
10	4	0	23, 2, 24	8, 50, 50, 29, 45, 36
0	3	5	23, 26, 15	9, 9, 18, 59, 3, 45
7	3	2	24	9, 36
3	7	1	24, 18	9, 50, 29, 24
4	2	4	25	10, 25
0	6	3	25, 18, 45	10, 40, 43, 21, 33, 45
11	2	1	25, 36	10, 55, 21, 36
7	6	0	25, 55, 12	11, 11, 50, 47, 2, 24
1	1	6	26, 2, 30	11, 18, 10, 6, 15
8	1	3	26, 40	11, 51, 6, 40
4	5	2	27	12, 9
15	1	0	27, 18, 24	12, 25, 39, 14, 33, 36
0	9	1	27, 20, 15	12, 27, 20, 20, 3, 45
5	0	5	27, 46, 40	12, 51, 36, 17, 46, 40
1	4	4	28, 7, 30	13, 11, 0, 56, 15
12	0	2	28, 26, 40	13, 29, 5, 11, 6, 40
8	4	1	28, 48	13, 49, 26, 24
4	8	0	29, 9, 36	14, 10, 18, 20, 9, 36
5	3	3	30	15
1	7	2	30, 22, 30	15, 22, 38, 26, 15
12	3	0	30, 43, 12	15, 43, 43, 6, 14, 24
2	2	5	31, 15	16, 16, 33, 45
9	2	2	32	17, 4
5	6	1	32, 24	17, 29, 45, 36
1	10	0	32, 48, 18	17, 56, 10, 4, 53, 24
6	1	4	33, 20	18, 31, 6, 40
2	5	3	33, 45	18, 59, 3, 45

a	b	c	N	N <sup>2</sup>
13	1	1	34, 8	19, 25, 5, 4
9	5	0	34, 33, 36	19, 54, 23, 36, 57, 36
3	0	6	34, 43, 20	20, 5, 37, 57, 46, 40
10	0	3	35, 33, 20	21, 4, 11, 51, 6, 40
6	4	2	36	21, 36
17	0	0	36, 24, 321	22, 5, 36, 25, 53, 4
2	8	1	36, 27	22, 8, 36, 9
3	3	4	37, 30	23, 26, 15
10	3	1	38, 24	24, 34, 33, 36
6	7	0	38, 52, 48	25, 11, 39, 15, 50, 24
0	2	6	39, 3, 45	25, 25, 52, 44, 3, 45
7	2	3	40	26, 40
3	6	2	40, 30	27, 20, 15
14	2	0	40, 57, 36	27, 57, 43, 17, 45, 36
4	1	5	41, 40	28, 56, 6, 40
0	5	4	42, 11, 15	29, 39, 47, 6, 33, 45
11	1	2	42, 40	30, 20, 26, 40
7	5	1	43, 12	31, 6, 14, 24
1	0	7	43, 24, 10	31, 23, 48, 4, 1, 40
3	9	0	43, 44, 24	31, 53, 11, 15, 21, 36
8	0	4	44, 26, 40	32, 55, 18, 31, 6, 40
4	4	3	45	33, 45
15	0	1	45, 30, 40	34, 31, 15, 40, 26, 40
0	8	2	45, 33, 45	34, 35, 56, 29, 3, 45
11	4	0	46, 4, 48	35, 23, 21, 59, 2, 24
1	3	5	46, 52, 30	36, 37, 15, 56, 15
8	3	2	48	38, 24
4	7	1	48, 36	39, 21, 57, 36
0	11	0	49, 12, 27	40, 21, 22, 41, 0, 9
5	2	4	50	41, 40
1	6	3	50, 37, 30	42, 42, 53, 26, 15
12	2	1	51, 12	43, 41, 26, 24
8	6	0	51, 50, 24	44, 47, 23, 8, 9, 36
2	1	6	52, 5	45, 12, 40, 25
9	1	3	53, 20	47, 24, 26, 40
5	5	2	54	48, 36
16	1	0	54, 36, 48	49, 42, 36, 58, 14, 24
1	9	1	54, 40, 30	49, 49, 21, 20, 15

a	b	c	N	N <sup>2</sup>
6	0	5	55,33,20	51,26,25,11, 6,40
2	4	4	56,45	52,44, 3,45
13	0	2	56,53,20	53,56,20,44,26,40
9	4	1	57,36	55,17,45,36
5	8	0	58,19,12	56,41,13,20,38,24

---

III. Ordnungs.

a	b	c	N	N <sup>2</sup>
6	3	3	1	1
2	7	2	1, 0, 45	1, 1, 30, 33, 45
13	3	0	1, 1, 26, 24	1, 2, 54, 52, 24, 57, 36
3	2	5	1, 2, 30	1, 5, 6, 15
10	2	2	1, 4	1, 8, 16
6	6	1	1, 4, 48	1, 9, 59, 2, 24
0	1	7	1, 5, 6, 15	1, 10, 38, 33, 9, 3, 45
2	10	0	1, 5, 36, 36	1, 11, 44, 40, 19, 33, 36
7	1	4	1, 6, 40	1, 14, 4, 26, 40
3	5	3	1, 7, 30	1, 15, 56, 15
14	1	1	1, 8, 16	1, 17, 40, 20, 16
10	5	0	1, 9, 7, 12	1, 19, 37, 34, 27, 50, 24
4	0	6	1, 9, 26, 40	1, 20, 22, 31, 51, 6, 40
0	4	5	1, 10, 18, 45	1, 22, 23, 50, 51, 33, 45
11	0	3	1, 11, 6, 40	1, 24, 16, 47, 24, 26, 40
7	4	2	1, 12	1, 26, 24
18	0	0	1, 12, 49, 4	1, 28, 22, 25, 43, 32, 16
3	8	1	1, 12, 54	1, 28, 34, 24, 36
4	3	4	1, 15	1, 33, 45
0	7	3	1, 15, 56, 15	1, 36, 6, 30, 4, 14, 3, 45
11	3	1	1, 16, 48	1, 38, 18, 14, 24
7	7	0	1, 17, 45, 36	1, 40, 46, 37, 3, 21, 36
1	2	6	1, 18, 7, 30	1, 41, 43, 30, 56, 15
8	2	3	1, 20	1, 46, 40
4	6	2	1, 21	1, 49, 21
15	2	0	1, 21, 55, 12	1, 51, 50, 53, 11, 2, 24
0	10	1	1, 22, 0, 45	1, 52, 6, 3, 0, 33, 45
5	1	5	1, 23, 20	1, 55, 44, 26, 40
1	5	4	1, 24, 22, 30	1, 58, 39, 8, 26, 15
12	1	2	1, 25, 20	2, 1, 21, 46, 40
8	5	1	1, 26, 24	2, 4, 24, 57, 36
2	0	7	1, 26, 48, 20	2, 5, 35, 12, 16, 6, 40
4	9	0	1, 27, 28, 48	2, 7, 32, 45, 1, 26, 24
9	0	4	1, 28, 53, 20	2, 11, 41, 14, 4, 26, 40
5	4	3	1, 30	2, 15
16	0	1	1, 31, 1, 20	2, 18, 5, 2, 41, 46, 40
1	8	2	1, 31, 7, 30	2, 18, 23, 45, 56, 15

a	b	c	N	N <sup>2</sup>
12	4	0	1,32, 9,36	2,21,33,27,56, 9,36
2	3	5	1,33,45	2,26,29, 3,45
9	3	2	1,36	2,33,36
5	7	1	1,37,12	2,37,27,50,24
1	11	0	1,38,24,54	2,41,25,30,44, 0,36
6	2	4	1,40	2,46,40
2	6	3	1,41,15	2,50,51,33,45
13	2	1	1,42,24	2,54,45,45,36
9	6	0	1,43,40,48	2,59, 9,32,32,38,24
3	1	6	1,44,10	3, 0,50,41,40
10	1	3	1,46,40	3, 9,37,46,40
6	5	2	1,48	3,14,24
0	0	8	1,48,30,25	3,16,13,45,25,10,25
17	1	0	1,49,13,36	3,18,50,27,52,57,36
2	9	1	1,49,21	3,19,17,25,21
7	0	5	1,51, 6,40	3,25,45,40,44,26,40
3	4	4	1,52,30	3,30,56,15
14	0	2	1,53,46,40	3,35,45,22,57,46,40
10	4	1	1,55,12	3,41,11, 2,24
6	8	0	1,56,38,24	3,46,44,53,22,33,36
0	3	6	1,57,11,15	3,48,52,54,36,33,45
7	3	3	2	4
3	7	2	2, 1,30	4, 6,12,15
14	3	0	2, 2,52,48	4,11,39,29,39,50,24
4	2	5	2, 5	4,20,25
0	6	4	2, 6,33,45	4,26,58, 3,59, 3,45
11	2	2	2, 8	4,33, 4
7	6	1	2, 9,36	4,39,56, 9,36
1	1	7	2,10,12,30	4,42,34,12,36,15
3	10	0	2,11,13,12	4,46,58,41,18,14,24
8	1	4	2,13,20	4,56,17,46,40
4	5	3	2,15	5, 3,45
15	1	1	2,16,32	5,10,41,21, 4
0	9	2	2,16,41,15	5,11,23,28,27,33,45
11	5	0	2,18,14,24	5,18,30,17,51,21,36
5	0	6	2,18,53,20	5,21,30, 7,24,26,40
1	4	5	2,20,37,30	5,29,35,23,26,15
12	0	3	2,22,13,20	5,37, 7, 9,37,46,40
8	4	2	2,24	5,45,36
19	0	0	2,25,38, 8	5,53,29,42,54, 9, 4

From the Otto Neugebauer papers  
 University of Pennsylvania White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

4	8	1	2,25,48	5,54,17,38,24
0	12	0	2,27,37,21	6, 3,12,24, 9, 1,21
5	3	4	2,30	6,15
1	7	3	2,31,52,30	6,24,26, 0,56,15
12	3	1	2,33,36	6,33,12,57,36
8	7	0	2,35,31,12	6,43, 6,28,13,26,24
2	2	6	2,36,15	6,46,54, 3,45
9	2	3	2,40	7, 6,40
5	6	2	2,42	7,17,24
16	2	0	2,43,50,24	7,27,23,32,44, 9,36
1	10	1	2,44, 1,30	7,28,24,12, 2,15
6	1	5	2,46,40	7,42,57,46,40
2	5	4	2,48,45	7,54,36,33,45
13	1	2	2,50,40	8, 5,27, 6,40
9	5	1	2,52,48	8,17,39,50,24
3	0	7	2,53,36,40	8,22,20,49, 4,26,40
5	9	0	2,54,57,36	8,30,11, 0, 5,45,36
10	0	4	2,57,46,40	8,46,44,56,17,46,40
6	4	3	3	9
17	0	1	3, 2, 2,40	9,12,20,10,47, 6,40
2	8	2	3, 2,15	9,13,35, 3,45
13	4	0	3, 4,19,12	9,26,13,51,44,38,24
3	3	5	3, 7,30	9,45,56,15
10	3	2	3,12	10,14,24
6	7	1	3,14,24	10,29,51,21,36
0	2	7	3,15,18,45	10,35,46,58,21,33,45
2	11	0	3,16,49,48	10,45,42, 2,56, 2,24
7	2	4	3,20	11, 6,40
3	6	3	3,22,30	11,23,26,15
14	2	1	3,24,48	11,39, 3, 2,24
10	6	0	3,27,21,36	11,56,38,10,10,33,36
4	1	6	3,28,20	12, 3,22,46,40
0	5	5	3,30,56,15	12,21,34,37,44, 3,45
11	1	3	3,33,20	12,30,31, 6,40
7	5	2	3,36	12,57,36
1	0	8	3,37, 0,50	13, 4,55, 1,40,41,40
18	1	0	3,38,27,12	13,15,21,51,31,50,24
3	9	1	3,38,42	13,17, 9,41,24
8	0	5	3,42,13,20	13,43, 2,42,57,46,40
4	4	4	3,45	14, 3,45

a	b	c	N	N <sup>2</sup>
15	0	2	3,47,33,20	14,23, 1,31,51, 6,40
0	8	3	3,47,48,45	14,24,58,32, 6,33,45
11	4	1	3,50,24	14,44,44, 9,36
7	8	0	3,53,16,48	15, 6,59,33,30,14,24
1	3	6	3,54,22,30	15,15,31,38,26,15
8	3	3	4	16
4	7	2	4, 3	16,24, 9
15	3	0	4, 5,45,36	16,46,37,58,39,21,36
0	11	1	4, 6, 2,15	16,48,54,27, 5, 3,45
5	2	5	4,10	17,21,40
1	6	4	4,13, 7,30	17,47,52,15,56,15
12	2	2	4,16	18,12,16
8	6	1	4,19,12	18,39,44,38,24
2	1	7	4,20,25	18,50,16,50,25
4	10	0	4,22,26,24	19, 7,54,45,12,57,36
9	1	4	4,26,40	19,45,11, 6,40
5	5	3	4,30	20,15
16	1	1	4,33, 4	20,42,45,24,16
1	9	2	4,33,22,30	20,45,33,53,26,15
12	5	0	4,36,28,48	21,14, 1,11,25,26,24
6	0	6	4,37,46,40	21,26, 0,29,37,46,40
2	4	5	4,41,15	21,58,21,33,45
13	0	3	4,44,26,40	22,28,28,38,31, 6,40
9	4	2	4,48	23, 2,24
20	0	0	4,51,16,16	23,33,58,51,36,36,16
5	8	1	4,51,36	23,37,10,33,36
1	12	0	4,55,14,42	24,12,49,36,36, 5,24
6	3	4	5	25
2	7	3	5, 3,45	25,37,44, 3,45
13	3	1	5, 7,12	26,12,51,50,24
9	7	0	5,11, 2,24	26,52,25,52,53,45,36
3	2	6	5,12,30	27, 7,36,15
10	2	3	5,20	28,26,40
6	6	2	5,24	29, 9,35
0	1	8	5,25,31,15	29,26, 3,48,46,33,45
17	2	0	5,27,40,48	29,49,34,10,56,38,24
2	10	1	5,28, 3	29,53,36,48, 9
7	1	5	5,33,20	30,51,51, 6,40
3	5	4	5,37,30	31,38,26,15

a	b	c	N	N <sup>2</sup>
3	5	4	5,37,30	31,38,26,15
14	1	2	5,41,20	32,21,48,26,40
10	5	1	5,45,36	33,10,39,21,36
4	0	7	5,47,13,20	33,29,23,16,17,46,40
6	9	0	5,49,55,12	34, 0,44, 0,23, 2,24
0	4	6	5,51,33,45	34,19,56,11,29, 3,45
11	0	4	5,55,33,20	35, 6,59,45,11, 6,40
7	4	3	6	36
18	0	1	6, 4, 5,20	36,49,20,43, 8,26,40
3	8	2	6, 4,30	36,54,20,15
14	4	0	6, 8,38,24	37,44,55,26,58,33,36
4	3	5	6,15	39, 3,45
0	7	4	6,19,41,15	40, 2,42,35,51,33,45
11	3	2	6,24	40,57,36
7	7	1	6,28,48	41,59,25,26,24
1	2	7	6,30,37,30	42,23, 7,53,26,15
3	11	0	6,33,39,36	43, 2,48,11,44, 9,36
8	2	4	6,40	44,26,40
4	6	3	6,45	45,33,45
15	2	1	6,49,36	46,36,12, 9,36
0	10	2	6,50, 3,45	46,42,31,15,14, 3,45
11	6	0	6,54,43,12	47,46,32,40,42,14,24
5	1	6	6,56,40	48,13,31, 6,40
1	5	5	7, 1,52,30	49,26,18,30,56,15
12	1	3	7, 6,40	50,34, 4,26,40
8	5	2	7,12	51,50,24
2	0	8	7,14, 1,40	52,19,40, 6,42,46,40
19	1	0	7,16,54,24	53, 1,27,26, 7,21,36
4	9	1	7,17,24	53, 8,38,45,36
0	13	0	7,22,52, 3	54,28,51,37,21,12, 9
9	0	5	7,24,26,40	54,52,10,51,51, 6,40
5	4	4	7,30	56,15
16	0	2	7,35, 6,40	57,32, 6, 7,24,26,40
1	8	3	7,35,37,30	57,59,54, 8,26,15
12	4	1	7,40,48	58,58,56,38,24
8	8	0	7,46,33,36	1, 0,27,58,14, 0,57,36
2	3	6	7,48,45	1, 1, 2, 6,33,45
9	3	3	8	1, 4
5	7	2	8, 6	1, 5,36,36
16	3	0	8,11,31,12	1, 7, 6,31,54,37,26,24



a	b	c	N	N <sup>2</sup>
1	11	1	8,12, 4,30	1, 7,15,37,48,20,15
6	2	5	8,20	1, 9,26,40
2	6	4	8,26,15	1,11,11,29, 3,45
13	2	2	8,32	1,12,49, 4
9	6	1	8,38,24	1,14,38,58,33,36
3	1	7	8,40,50	1,15,21, 7,21,40
5	10	0	8,44,52,48	1,16,31,39, 0,51,50,24
10	1	4	8,53,20	1,19, 0,44,26,40
6	5	3	9	1,21
0	0	9	9, 2,32, 5	1,21,45,43,55,29,20,25
17	1	1	9, 6, 8	1,22,51, 1,37, 4
2	9	2	9, 6,45	1,23, 2,15,33,45
13	5	0	9,12,57,36	1,24,56, 4,45,41,45,36
7	0	6	9,15,33,20	1,25,44, 1,58,31, 6,40
3	4	5	9,22,30	1,27,53,26,15
14	0	3	9,28,53,20	1,29,53,54,34, 4,26,40
10	4	2	9,36	1,32, 9,36
21	0	0	9,42,32,32	1,34,15,55,26,26,25, 4
6	8	1	9,43,12	1,34,28,42,14,24
0	3	7	9,45,56,15	1,35,22, 2,45,14, 3,45
2	12	0	9,50,29,24	1,36,51,18,26,24,21,36
7	3	4	10	1,40
3	7	3	10, 7,30	1,42,30,56,15
14	3	1	10,14,24	1,44,51,27,21,36
10	7	0	10,22, 4,48	1,47,29,43,31,35, 2,24
4	2	6	10,25	1,48,30,25
0	6	5	10,32,48,45	1,51,14,11,39,36,33,45
11	2	3	10,40	1,53,46,40
7	6	2	10,48	1,56,38,24
1	1	8	10,51, 2,30	1,57,44,15,15, 6,15
18	2	0	10,55,21,36	1,59,18,16,43,46,33,36
3	10	1	10,56, 6	1,59,34,27,12,36
8	1	5	11, 6,40	2, 3,27,24,26,40
4	5	4	11,15	2, 6,33,45
15	1	2	11,22,40	2, 9,27,13,46,40
0	9	3	11,23,26,15	2, 9,44,46,48,59, 3,45
11	5	1	11,31,12	2,12,42,37,26,24
5	0	7	11,34,26,40	2,13,57,33, 5,11, 6,40
7	9	0	11,39,50,24	2,16, 2,56,1,32, 9,36
1	4	6	11,43, 7,30	2,17,19,44,45,56,15

From the Otto Neugebauer papers  
 Copyright © 2000 by Sherry White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>2</sup>
12	0	4	11,51, 6,40	2,20,27,59, 0,44,26,40
8	4	3	12	2,24
19	0	1	12, 8,10,40	2,27,17,22,52,33,46,40
4	8	2	12, 9	2,27,37,21
15	4	0	12,17,16,48	2,30,59,41,47,54,14,24
0	12	1	12,18, 6,45	2,31,20,10, 3,45,33,45
5	3	5	12,30	2,36,15
1	7	4	12,39,22,30	2,40,10,50,23,26,45
12	3	2	12,48	2,43,50,24
8	7	1	12,57,36	2,47,57,41,45,36
2	2	7	13, 1,15	2,49,32,31,33,45
4	11	0	13, 7,19,12	2,52,11,12,46,56,38,24
9	2	4	13,20	2,57,46,40
5	6	3	13,30	3, 2,15
16	2	1	13,39,12	3, 6,24,48,38,24
1	10	2	13,40, 7,30	3, 6,50, 5, 0,56,15
12	6	0	13,49,26,24	3,11, 6,10,42,48,57,36
6	1	6	13,53,20	3,12,54, 4,26,40
2	5	5	14, 3,45	3,17,45,14, 3,45
13	1	3	14,13,20	3,22,16,17,46,40
9	5	2	14,24	3,27,21,36
3	0	8	14,28, 3,20	3,29,18,40,26,51, 6,40
20	1	0	14,33,48,48	3,32, 5,49,44,29,26,24
5	9	1	14,34,48	3,32,34,35, 2,24
1	13	0	14,45,44, 6	3,37,55,26,29,24,48,36
10	0	5	14,48,53,20	3,39,28,43,27,24,26,40
6	4	4	15	3,45
17	0	2	15,10,13,20	3,50, 8,24,29,37,46,40
2	8	3	15,11,15	3,50,39,36,33,45
13	4	1	15,21,36	3,55,55,46,33,36
9	8	0	15,33, 7,12	4, 1,51,52,56, 3,50,24
3	3	6	15,37,30	4, 4, 8,26,15
10	3	3	16	4,16
6	7	2	16,12	4,22,26,24
0	2	8	16,16,33,45	4,24,54,34,18,59, 3,45
17	3	0	16,23, 2,24	4,28,26, 7,38,29,45,36
2	11	1	16,24, 9	4,29, 2,31,13,21
7	2	5	16,40	4,37,46,40
3	6	4	16,52,30	4,44,45,56,15
14	2	2	17, 4	4,51,16,16

From the Otto Neugebauer papers  
 Courtesy of the Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>2</sup>
10	6	1	17,16,48	4,58,35,54,14,24
4	1	7	17,21,40	5, 1,24,29,26,40
6	10	0	17,29,45,36	5, 6,6,36,3,27,21,36
0	5	6	17,34,41,15	5, 8,59,25,43,21,33,45
11	1	4	17,46,40	5,16, 2,57,46,40
7	5	3	18	5,24
1	0	9	18, 5, 4,10	5,27, 2,55,41,57,21,40
18	1	1	18,12,16	5,31,24, 6,28,16
3	9	2	18,13,30	5,32, 9, 2,15
14	5	0	18,25,55,12	5,39,44,19, 2,47, 2,24
8	0	6	18,31, 6,40	5,42,56, 7,54, 4,26,40
4	4	5	18,45	5,51,33,45
15	0	3	18,57,46,40	5,59,35,38,16,17,46,40
0	8	4	18,59, 3,45	6, 0,24,23,22,44, 3,45
11	4	2	19,12	6, 8,38,24
22	0	0	19,25, 5, 4	6,17, 3,41,45,45,40,16
7	8	1	19,26,24	6,17,54,48,57,36
1	3	7	19,31,52,30	6,21,28,11, 0,56,15
3	12	0	19,40,58,48	6,27,25,13,45,37,26,24
8	3	4	20	6,40
4	7	3	20,15	6,50, 3,45
15	3	1	20,28,48	6,59,25,49,26,24
0	11	2	20,30,11,15	7, 0,22,41,17, 6,33,45
11	7	0	20,44, 9,36	7, 9,58,54, 6,20, 9,36
5	2	6	20,50	7,14, 1,40
1	6	5	21, 5,37,30	7,24,56,46,38,26,15
12	2	3	21,20	7,35, 6,40
8	6	2	21,36	7,46,33,36
2	1	8	21,42, 5	7,50,57, 1, 0,25
19	2	0	21,50,43,12	7,57,13, 6,55, 6,14,24
4	10	1	21,52,12	7,58,17,48,50,24
0	14	0	22, 8,36, 9	8,10,19,44,36,10,49,21
9	1	5	22,13,20	8,13,49,37,46,40
5	5	4	22,30	8,26,15
16	1	2	22,45,20	8,37,48,55, 6,40
1	9	3	22,46,52,30	8,38,59, 7,15,56,15
12	5	1	23, 2,24	8,50,50,29,45,36
6	0	7	23, 8,53,20	8,55,50,12,20,44,26,40
8	9	0	23,19,40,48	9, 4,11,44, 6, 8,38,24
2	4	6	23,26,15	9, 9,18,59, 3,45

a	b	c	N	N <sup>2</sup>
13	0	4	23,42,13,20	9,21,51,56, 2,57,46,40
9	4	3	24	9,36
20	0	1	24,16,21,20	9,49, 9,31,30,15, 6,40
5	8	2	24,18	9,50,29,24
16	4	0	24,34,33,36	10, 3,58,47,11,36,57,36
1	12	1	24,36,13,30	10, 5,20,40,15, 2,15
6	3	5	25	10,25
2	7	4	25,18,45	10,40,43,21,33,45
13	3	2	25,36	10,55,21,36
9	7	1	25,55,12	11,11,50,47, 2,24
3	2	7	26, 2,30	11,18,10, 6,15
5	11	0	26,14,38,24	11,28,44,51, 7,46,33,36
10	2	4	26,40	11,51, 6,40
6	6	3	27	12, 9
0	1	9	27, 7,36,15	12,15,51,35,19,24, 3,45
17	2	1	27,18,24	12,25,39,14,33,36
2	10	2	27,20,15	12,27,20,20, 3,45
13	6	0	27,38,52,48	12,44,24,42,51,15,50,24
7	1	6	27,46,40	12,51,36,17,46,40
3	5	5	28, 7,30	13,11, 0,56,15
14	1	3	28,26,40	13,29, 5,11, 6,40
10	5	2	28,48	13,49,26,24
4	0	8	28,56, 6,40	13,57,14,41,47,24,26,40
21	1	0	29, 7,37,36	14, 8,23,18,57,57,45,36
6	9	1	29, 9,36	14,10,18,20, 9,36
0	4	7	29,17,48,45	14,18,18,24,47, 6,33,45
2	13	0	29,31,28,12	14,31,41,45,57,39,14,24
11	0	5	29,37,46,40	14,37,54,53,49,37,46,40
7	4	4	30	15
18	0	2	30,20,26,40	15,20,33,37,58,31, 6,40
3	8	3	30,22,30	15,22,38,26,15
14	4	1	30,43,12	15,43,43, 6,14,24
10	8	0	31, 6,14,24	16, 7,27,31,44,15,21,36
4	3	6	31,15	16,16,33,45
0	7	5	31,38,26,15	16,41, 7,44,56,29, 3,45
11	3	3	32	17, 4
7	7	2	32,24	17,29,45,36
1	2	8	32,33, 7,30	17,39,38,17,15,56,15
18	3	0	32,46, 4,48	17,53,44,30,33,59, 2,24
3	11	1	32,48,18	17,56,10, 4,53,24

a	b	c	N	N <sup>2</sup>
8	2	5	33,20	18,31, 6,40
4	6	4	33,45	18,59, 3,45
15	2	2	34, 8	19,25, 5, 4,
0	10	3	34,10,18,45	19,27,43, 1,20,51,33,45
11	6	1	34,33,36	19,54,23,36,57,36
5	1	7	34,43,20	20, 5,37,57,46,40
7	10	0	34,59,31,12	20,24,26,24,13,49,26,24
1	5	6	35, 9,22,30	20,35,57,42,53,26,15
12	1	4	35,33,20	21, 4,11,51, 6,40
8	5	3	36	21,36
2	0	9	36,10, 8,20	21,48,11,42,47,49,26,40
19	1	1	36,24,32	22, 5,36,25,53, 4
4	9	2	36,27	22, 8,36, 9
15	5	0	36,51,50,24	22,38,57,16,11, 8, 9,36
0	13	1	36,54,20,15	22,42, 1,30,33,50, 3,45
9	0	6	37, 2,13,20	22,51,44,31,36,17,46,40
5	4	5	37,30	23,26,15
16	0	3	37,55,33,20	23,58,22,33, 5,11, 6,40
1	8	4	37,58, 7,30	24, 1,37,33,30,56,15
12	4	2	38,24	24,34,33,36
23	0	0	38,50,10, 8	24,52,14,47, 3, 2,41, 4
8	8	1	38,52,48	25,11,39,15,50,24
2	3	7	39, 3,45	25,25,52,44, 3,45
4	12	0	39,21,57,36	25,49,40,55, 2,29,45,36
9	3	4	40	26,40
5	7	3	40,30	27,20,15
16	3	1	40,57,36	27,57,43,17,45,36
1	11	2	41, 0,22,30	28, 1,30,45, 8,26,15
12	7	0	41,28,19,12	28,39,55,36,25,20,38,24
6	2	6	41,40	28,56, 6,40
2	6	5	42,11,15	29,39,47, 6,33,45
13	2	3	42,40	30,20,26,40
9	6	2	43,12	31, 6,14,24
3	1	8	43,24,10	31,23,48, 4, 1,40
20	2	0	43,41,26,24	31,48,52,27,40,24,57,36
5	10	1	43,44,24	31,53,11,15,21,36
1	14	0	44,17,12,18	32,41,18,58,24,43,17,24
10	1	5	44,26,40	32,55,18,31, 6,40
6	5	4	45	33,45
0	0	10	45,12,40,25	34, 4, 3,18,12,13,30,25

From the Otto Neugebauer papers  
 Gift of the Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

a	b	c	N	N <sup>2</sup>
17	1	2	45,30,40	34,31,15,40,26,40
2	9	3	45,33,45	34,35,56,29, 3,45
13	5	1	46, 4,48	35,23,21,59, 2,24
7	0	7	46,17,46,40	35,43,20,49,22,57,46,40
9	9	0	46,39,21,36	36,16,46,56,24,34,33,36
3	4	6	46,52,30	36,37,15,56,15
14	0	4	47,24,26,40	37,27,27,44,11,51, 6,40
10	4	3	48	38,24
21	0	1	48,32,42,40	39,16,38, 6, 1, 0,26,40
6	8	2	48,36	39,21,57,36
0	3	8	48,49,41,15	39,44,11, 8,50,51,33,45
17	4	0	49, 9, 7,12	40,15,55, 8,46,27,50,24
2	12	1	49,12,27	40,21,22,41, 0, 9
7	3	5	50	41,40
3	7	4	50,37,30	42,42,53,26,15
14	3	2	51,12	43,41,26,24
10	7	1	51,50,24	44,47,23, 8, 9,36
4	2	7	52, 5	45,12,40,25
6	11	0	52,29,16,48	45,54,59,24,31, 6,14,24
0	6	6	52,44, 3,45	46,20,54,51,30,14, 3,45
11	2	4	53,20	47,24,26,40
7	6	3	54	48,36
1	1	9	54,15,12,30	49, 3,26,21,17,36,15
18	2	1	54,36,48	49,42,36,58,14,24
3	10	2	54,40,30	49,49,21,20,15
14	6	0	55,17,45,36	50,57,38,51,25, 3,21,36
8	1	6	55,33,20	51,26,25,11, 6,40
4	5	5	56,15	52,44, 3,45
15	1	3	56,53,20	53,56,20,44,26,40
0	9	4	56,57,11,15	54, 3,39,30,24,36,33,45
11	5	2	57,36	55,17,45,36
5	0	8	57,52,13,20	55,48,58,47, 9,37,46,40
22	1	0	58,15,15,12	56,33,33,15,51,51, 2,24
7	9	1	58,19,12	56,41,13,20,38,24
1	4	7	58,35,37,30	57,13,13,39, 8,26,15
3	13	0	59, 2,56,24	58, 6,47, 3,50,36,57,36
12	0	5	59,15,33,20	58,31,39,35,18,31, 6,40

III.

Kubikzahl - Tafel.

Kuben der Zahlen n von 1 bis 59.

128

n	$n^3$	n	$n^3$
1	1	31	8,16,31
2	8	32	9,6,8
3	27	33	9,58,57
4	1,4	34	10,55,4
5	2,5	35	11,54,35
6	3,36	36	12,57,36
7	5,43	37	14,4,13
8	8,32	38	15,14,32
9	12,9	39	16,28,39
10	16,40	40	17,46,40
11	22,11	41	19,8,41
12	28,48	42	20,34,48
13	36,37	43	22,5,7
14	45,44	44	23,39,44
15	56,15	45	25,18,45
16	1,8,16	46	27,2,16
17	1,21,53	47	28,50,23
18	1,37,12	48	30,43,12
19	1,54,19	49	32,40,49
20	2,13,20	50	34,43,20
21	2,34,21	51	36,50,51
22	2,57,28	52	39,3,28
23	3,22,47	53	41,21,17
24	3,50,24	54	43,44,24
25	4,20,25	55	46,12,55
26	4,52,56	56	48,46,56
27	5,28,3	57	51,26,33
28	6,5,52	58	54,11,52
29	6,46,29	59	57,2,59
30	7,30		



B. Kuben der Zahlen N.

Nullte Ordnung.

129

a	b	c	N	$N^3$
0	0	0	1	1
1	0	0	2	8
0	1	0	3	27
2	0	0	4	1, 4
0	0	1	5	2, 5
1	1	0	6	3, 36
3	0	0	8	8, 32
0	2	0	9	12, 9
1	0	1	10	16, 40
2	1	0	12	28, 48
0	1	1	15	56, 15
4	0	0	16	1, 8, 16
1	2	0	18	1, 37, 12
2	0	1	20	2, 13, 20
3	1	0	24	3, 50, 24
0	0	2	25	4, 20, 25
0	3	0	27	5, 28, 3
1	1	1	30	7, 30
5	0	0	32	9, 6, 8
2	2	0	36	12, 57, 36
3	0	1	40	17, 46, 40
0	2	1	45	25, 18, 45
4	1	0	48	30, 43, 12
1	0	2	50	34, 43, 20
1	3	0	54	43, 44, 24

a	b	c	N	$N^3$
2	1	1	1	1
6	0	0	1, 4	1, 12, 49, 4
3	2	0	1, 12	1, 43, 40, 48
0	1	2	1, 15	1, 57, 11, 15
4	0	1	1, 20	2, 22, 13, 20
0	4	0	1, 21	2, 27, 37, 21
1	2	1	1, 30	3, 22, 30
5	1	0	1, 36	4, 5, 45, 36
2	0	2	1, 40	4, 37, 46, 40
2	3	0	1, 48	5, 49, 55, 12
3	1	1	2	8
0	0	3	2, 5	9, 2, 32, 5
7	0	0	2, 8	9, 42, 32, 32
0	3	1	2, 15	11, 23, 26, 15
4	2	0	2, 24	13, 49, 26, 24
1	1	2	2, 30	15, 37, 30
5	0	1	2, 40	18, 57, 46, 40
1	4	0	2, 42	19, 40, 58, 48
2	2	1	3	27
6	1	0	3, 12	32, 46, 4, 48
3	0	2	3, 20	37, 2, 13, 20
3	3	0	3, 36	46, 39, 21, 36
0	2	2	3, 45	52, 44, 3, 45
4	1	1	4	1, 4
0	5	0	4, 3	1, 6, 25, 48, 27
1	0	3	4, 10	1, 12, 20, 16, 40
8	0	0	4, 16	1, 17, 40, 20, 16
1	3	1	4, 30	1, 31, 7, 30
5	2	0	4, 48	1, 50, 35, 31, 12
2	1	2	5	2, 5
6	0	1	5, 20	2, 31, 42, 13, 20
2	4	0	5, 24	2, 37, 27, 50, 24
3	2	1	6	3, 36
0	1	3	6, 15	4, 4, 8, 26, 15
7	1	0	6, 24	4, 22, 8, 38, 24
4	0	2	6, 40	4, 56, 17, 46, 40
0	4	1	6, 45	5, 7, 32, 48, 45
4	3	0	7, 12	6, 13, 14, 52, 48

a	b	c	N	N <sup>3</sup>
1	2	2	7,30	7, 1,52,30
5	1	1	8	8,32
1	5	0	8, 6	8,51,26,27,36
2	0	3	8,20	9,38,42,13,20
9	0	0	8,32	10,21,22,42, 8
2	3	1	9	12, 9
6	2	0	9,36	14,44,44, 9,36
3	1	2	10	16,40
0	0	4	10,25	18,50,16,50,25
7	0	1	10,40	20,13,37,46,40
3	4	0	10,48	20,59,42,43,12
0	3	2	11,15	23,43,49,41,15
4	2	1	12	28,48
0	6	0	12, 9	29,53,36,48, 9
1	1	3	12,30	32,33, 7,30
8	1	0	12,48	34,57, 9, 7,12
5	0	2	13,20	39,30,22,13,20
1	4	1	13,30	41, 0,22,30
5	3	0	14,24	49,45,59, 2,24
2	2	2	15	56,15
6	1	1	16	1, 8,16
2	5	0	16,12	1,10,51,31,40,48
3	0	3	16,40	1,17, 9,37,46,40
10	0	0	17, 4	1,22,51, 1,37, 4
3	3	1	18	1,37,12
0	2	3	18,45	1,49,51,47,48,45
7	2	0	19,12	1,57,57,53,16,48
4	1	2	20	2,13,20
0	5	1	20,15	2,18,23,45,56,15
1	0	4	20,50	2,30,42,14,43,20
8	0	1	21,20	2,41,49, 2,13,20
4	4	0	21,36	2,47,57,41,45,36
1	3	2	22,30	3, 9,50,37,30
5	2	1	24	3,50,24
1	6	0	24,18	3,59, 8,54,25,12
2	1	3	25	4,20,25
9	1	0	25,36	4,39,37,12,57,36
6	0	2	26,40	5,16, 2,57,46,40
2	4	1	27	5,28, 3

From the Pitt-Levy Queer papers  
 Courtesy of The Shell, White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

a	b	c	N	N <sup>3</sup>
6	3	0	28,48	6,38, 7,52,19,12
3	2	2	30	7,30
0	1	4	31,15	8,28,37,34,41,15
7	1	1	32	9, 6, 8
3	5	0	32,24	9,26,52,13,26,24
4	0	3	33,20	10,17,17, 2,13,20
0	4	2	33,45	10,40,43,21,33,45
11	0	0	34, 8	11, 2,48,12,56,12
4	3	1	36	12,57,36
0	7	0	36,27	13,27, 7,33,40, 3
1	2	3	37,30	14,38,54,22,30
8	2	0	38,24	15,43,43, 6,14,24
5	1	2	40	17,46,40
1	5	1	40,30	18,27,10, 7,30
2	0	4	41,40	20, 5,37,57,46,40
9	0	1	42,40	21,34,32,17,46,40
5	4	0	43,12	22,23,41,34, 4,48
2	3	2	45	25,18,45
6	2	1	48	30,43,12
2	6	0	48,36	31,53,11,15,21,36
3	1	3	50	34,43,20
10	1	0	51,12	37,16,57,43,40,48
0	0	5	52, 5	39,14,45, 5, 2, 5
7	0	2	53,20	42, 8,23,42,13,20
3	4	1	54	43,44,24
0	3	3	56,15	49,26,18,30,56,15
7	3	0	57,36	53, 5, 2,58,33,36

a	b	c	N	N <sup>3</sup>
4	2	2	1	1
0	6	1	1, 0, 45	1, 2, 16, 41, 40, 18, 45
1	1	4	1, 2, 30	1, 7, 49, 0, 37, 30
8	1	1	1, 4	1, 12, 49, 4
4	5	0	1, 4, 48	1, 15, 34, 57, 47, 31, 12
5	0	3	1, 6, 40	1, 22, 18, 16, 17, 46, 40
1	4	2	1, 7, 30	1, 25, 25, 46, 52, 30
12	0	0	1, 8, 16	1, 28, 22, 25, 43, 32, 16
5	3	1	1, 12	1, 43, 40, 48
1	7	0	1, 12, 54	1, 47, 37, 0, 29, 20, 24
2	2	3	1, 15	1, 57, 11, 15
9	2	0	1, 16, 48	2, 5, 49, 44, 49, 55, 12
6	1	2	1, 20	2, 22, 13, 20
2	5	1	1, 21	2, 27, 37, 21
3	0	4	1, 23, 20	2, 40, 45, 3, 42, 13, 20
10	0	1	1, 25, 20	2, 52, 36, 18, 22, 13, 20
6	4	0	1, 26, 24	2, 59, 9, 32, 32, 38, 24
3	3	2	1, 30	3, 22, 30
0	2	4	1, 33, 45	3, 48, 52, 54, 36, 33, 45
7	2	1	1, 36	4, 5, 45, 36
3	6	0	1, 37, 12	4, 15, 30, 2, 52, 48
4	1	3	1, 40	4, 37, 46, 40
0	5	2	1, 41, 15	4, 48, 19, 30, 42, 11, 15
11	1	0	1, 42, 24	4, 58, 15, 41, 49, 26, 24
1	0	5	1, 44, 10	5, 13, 58, 0, 40, 16, 40
8	0	2	1, 46, 40	5, 37, 7, 9, 37, 46, 40
4	4	1	1, 48	5, 49, 55, 12
0	8	0	1, 49, 21	6, 3, 12, 24, 9, 1, 21
1	3	3	1, 52, 30	6, 35, 30, 28, 7, 30
8	3	0	1, 55, 12	7, 4, 40, 23, 48, 28, 48
5	2	2	2	8
1	6	1	2, 1, 30	8, 18, 13, 33, 22, 30
2	1	4	2, 5	9, 2, 32, 5
9	1	1	2, 8	9, 42, 32, 32
5	5	0	2, 9, 36	10, 4, 39, 42, 20, 9, 36
6	0	3	2, 13, 20	10, 58, 26, 10, 22, 13, 20
2	4	2	2, 15	11, 23, 26, 15

a	b	c	N	N'
13	0	0	2,16,32	11,46,59,25,48,18, 8
6	3	1	2,24	13,49,26,24
2	7	0	2,25,48	14,20,56, 3,54,43,12
3	2	3	2,30	15,37,30
10	2	0	2,33,36	16,46,37,58,39,21,36
0	1	5	2,36,15	17,39,38,17,15,56,15
7	1	2	2,40	18,57,46,40
3	5	1	2,42	19,40,58,48
4	0	4	2,46,40	21,26, 0,29,37,46,40
0	4	3	2,48,45	22,14,50,19,55,18,45
11	0	1	2,50,40	23, 0,50,26,57,46,40
7	4	0	2,52,48	23,53,16,20,21, 7,12
4	3	2	3	27
0	7	1	3, 2,15	28, 1,30,45, 8,26,15
1	2	4	3, 7,30	30,31, 3,16,52,30
8	2	1	3,12	32,46, 4,48
4	6	0	3,14,24	34, 0,44, 0,23, 2,24
5	1	3	3,20	37, 2,13,20
1	5	2	3,22,30	38,26,36, 5,37,30
12	1	0	3,24,48	39,46, 5,34,35,31,12
2	0	5	3,28,20	41,51,44, 5,22,13,20
9	0	2	3,33,20	44,56,57,17, 2,13,20
5	4	1	3,36	46,39,21,36
1	8	0	3,38,42	48,25,39,13,12,10,48
2	3	3	3,45	52,44, 3,45
9	3	0	3,50,24	56,37,23,10,27,50,24
6	2	2	4	1, 4

IV.

Multiplikationstabelle.

V. Multiplikationstabelle für Zahlen N.

44,26,40	22,30	16,40	12,30	8,20	7,30	7,1
1,28,53,20	45	33,20	25	16,40	15	14,1
2,13,20	1, 7,30	50	37,30	25	22,30	21,1
2,57,46,40	1,30	1, 6,40	50	33,20	30	28,1
2,42,13,20	1,52,30	1,23,20	1, 2,30	41,40	37,30	36
4,26,40	2,15	1,40	1,15	50	45	43,1
5,11, 6,40	2,37,30	1,56,40	1,27,30	58,20	52,30	50,1
5,55,33,20	3	2,13,20	1,40	1, 6,40	1	57,1
6,40	3,22,30	2,30	1,52,30	1,15	1, 7,30	1, 4,1
7,24,26,40	3,45	2,46,40	2, 5	1,23,20	1,15	1,12
8, 8,53,20	4, 7,30	3, 3,20	2,17,30	1,31,40	1,22,30	1,19,1
8,53,20	4,30	3,20	2,30	1,40	1,30	1,26,1
9,37,46,40	4,52,30	3,36,40	2,42,30	1,48,20	1,37,30	1,33,1
10,22,13,20	5,15	3,53,20	2,55	1,56,40	1,45	1,40,1
11, 6,40	5,37,30	4,10	3, 7,30	2, 5	1,52,30	1,48,1
11,51, 6,40	6	4,26,40	3,20	2,13,20	2	1,55,1
12,35,33,20	6,22,30	4,43,20	3,32,30	2,21,40	2, 7,30	2, 2,1
13,10	6,45	5	3,45	2,30	2,15	2, 9,1
14, 4,26,40	7, 7,30	5,16,40	3,57,30	2,38,20	2,22,30	2,16,1
14,48,53,20	7,30	5,33,20	4,10	2,46,40	2,30	2,24,1
22,13,20	11,15	8,20	6,15	4,10	3,45	3,36,1
19,37,46,40	15	11, 6,40	8,20	5,33,20	5	4,48,1
37, 2,13,20	18,45	13,53,20	10,25	6,56,40	6,15	6

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA



7,12	6,40	4,30	3,45	3,20	2,30	2,24
14,24	13,20	9	7,30	6,40	5	4,48
21,36	20	13,30	11,15	10	7,30	7,12
28,48	26,40	18	15	13,20	10	9,36
36	33,20	22,30	18,45	16,40	12,30	12
43,12	40	27	22,30	20	15	14,24
50,24	46,40	31,30	26,15	23,20	17,30	16,48
57,36	53,20	36	30	26,40	20	19,12
1, 4,48	1	40,30	33,45	30	22,30	21,36
1,12	1, 6,40	45	37,30	33,20	25	24
1,19,12	1,13,20	49,30	41,15	36,40	27,30	26,24
1,26,24	1,20	54	45	40	30	28,48
1,33,36	1,26,40	58,30	48,45	43,20	32,30	31,12
1,40,48	1,33,20	1, 3	52,30	46,40	35	33,36
1,48	1,40	1, 7,30	56,15	50	37,30	36
1,55,12	1,46,40	1,12	1	53,20	40	38,24
2, 2,24	1,53,20	1,16,30	1, 3,45	56,40	42,30	40,48
2, 9,36	2	1,21	1, 7,30	1	45	43,12
2,16,48	2, 6,40	1,25,30	1,11,15	1, 3,20	47,30	45,36
2,24	2,13,20	1,30	1,15	1, 6,40	50	48
3,36	3,20	2,15	1,52,30	1,40	1,15	1,12
4,48	4,26,40	3	2,30	2,13,20	1,40	1,36
6	5,33,20	3,45	3, 7,30	2,46,40	2, 5	2

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

2,15	1,40	1,30	1,20	1,15
4,30	3,20	3	2,40	2,30
6,45	5	4,30	4	3,45
9	6,40	6	5,20	5
11,15	8,20	7,30	6,40	6,15
13,30	10	9	8	7,30
15,45	11,40	10,30	9,20	8,45
18	13,20	12	10,40	10
20,15	15	13,30	12	11,15
22,30	16,40	15	13,20	12,30
24,45	18,20	16,30	14,40	13,45
27	20	18	16	15
29,15	21,40	19,30	17,20	16,15
31,30	23,20	21	18,40	17,30
33,45	25	22,30	20	18,45
36	26,40	24	21,20	20
38,15	28,20	25,30	22,40	21,15
40,30	30	27	24	22,30
42,45	31,40	28,30	25,20	23,45
45	33,20	30	26,40	25
1, 7,30	50	45	40	37,30
1,30	1, 6,40	1	53,20	50
1,52,30	1,23,20	1,15	1, 6,40	1, 2,30

1	2,13,20	1,52,30	1, 6,40
2	4,26,40	3,45	2,13,20
3	6,40	5,37,30	3,20
4	8,53,20	7,30	4,26,40
5	11, 6,40	9,22,30	5,33,20
6	13,20	11,15	6,40
7	15,33,20	13, 7,30	7,46,40
8	17,46,40	15	8,53,20
9	20	16,52,30	10
10	22,13,20	18,45	11, 6,40
11	24,26,40	20,37,30	12,13,20
12	26,40	22,30	13,20
13	28,53,20	24,22,30	14,26,40
14	31, 6,40	26,15	15,33,20
15	33,20	28, 7,30	16,40
16	35,33,20	30	17,46,40
17	37,46,40	31,52,30	18,53,20
18	40	33,45	20
19	42,13,20	35,37,30	21, 6,40
20	44,26,40	37,30	22,13,20
30	1, 6,40	56,15	33,20
40	1,28,53,20	1,15	44,26,40
50	1,51, 6,40	1,33,45	55,33,20

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

VI. Zahlentheoretische Funktionen.

$n$	$\sum_{i=1}^n i$	$\sum_{k=1}^n \sum_{i=1}^k i$	$n^2$	$\sum_{i=1}^n i^2$	$\sum_{k=1}^n \sum_{i=1}^k i^2$	$n^3$	$\sum_{i=1}^n i^3 = \left(\sum_{i=1}^n i\right)^2$	$\sum_{k=1}^n \sum_{i=1}^k i^3$
1	1	1	1	1	1	1	1	1
2	3	4	4	5	6	8	9	10
3	6	10	9	14	20	27	36	46
4	10	20	16	30	50	64	100	154
5	15	35	25	55	105	125	225	401
6	21	56	36	91	176	216	441	812
7	28	84	49	140	280	343	784	1407
8	36	120	64	204	420	512	1296	2528
9	45	165	81	285	600	729	2025	4201
10	55	220	100	385	820	1000	3025	7154
11	66	286	121	506	1080	1331	4184	11029
12	78	364	144	650	1400	1728	5544	15954
13	91	455	169	819	1800	2197	7225	22029
14	105	560	196	1015	2300	2744	9216	29354
15	120	680	225	1240	2900	3375	11529	38029
16	136	816	256	1496	3600	4096	14400	48154
17	153	969	289	1785	4400	4913	17721	59829
18	171	1140	324	2109	5300	5832	21600	73154
19	190	1330	361	2470	6300	6859	26016	88229
20	210	1540	400	2870	7400	8000	31344	105054
30	465	4650	900	9465	25500	27000	129600	465000
40	820	15400	1600	20440	68000	64000	262400	1540000
50	1275	32500	2500	42925	150000	125000	675000	3250000

From the Otto Neugebauer papers

Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

$$S_a = 1,0,0 \cdot \sum_{i=1}^{12a} \left( \frac{11+i}{12} \right)^2 = 1,0,0 \left\{ \frac{a(a+1)}{6} (24a + 45) + \frac{11 \cdot 23}{6 \cdot 12} a \right\}$$

$S_a$	$a$
4, 4, 32, 30	3
22, 24, 5, 0	6
1, 5, 46, 37, 30	9
2, 25, 0, 10, 0	12
4, 30, 52, 42, 30	15
7, 34, 12, 15, 0	18
11, 45, 46, 47, 30	21
17, 16, 24, 20, 0	24
24, 16, 52, 52, 30	27
32, 58, 0, 25, 0	30
43, 30, 34, 57, 30	33
56, 5, 24, 30, 0	36
1, 10, 53, 17, 2, 30	39
1, 28, 5, 0, 35, 0	42
1, 47, 51, 23, 7, 30	45
2, 10, 23, 12, 40, 0	48
2, 35, 51, 17, 12, 30	51
3, 4, 26, 24, 45, 0	54
3, 36, 19, 23, 17, 30	57

100. 14 70

VII. Quadratzahltablelle

für alle zweistelligen durch 5 teilbaren  
Zahlen

n	n <sup>2</sup>	n	n <sup>2</sup>
1	1	4	16
1, 5	1, 10, 25	4, 5	16, 40, 25
1, 10	1, 21, 40	4, 10	17, 21, 40
1, 15	1, 33, 45	4, 15	18, 3, 45
1, 20	1, 46, 40	4, 20	18, 46, 40
1, 25	2, 0, 25	4, 25	19, 30, 25
1, 30	2, 15, 0	4, 30	20, 15, 0
1, 35	2, 30, 25	4, 35	21, 0, 25
1, 40	2, 46, 40	4, 40	21, 46, 40
1, 45	3, 3, 45	4, 45	22, 33, 45
1, 50	3, 21, 40	4, 50	23, 21, 40
1, 55	3, 40, 25	4, 55	24, 10, 25
2	4	5	25
2, 5	4, 20, 25	5, 5	25, 50, 25
2, 10	4, 41, 40	5, 10	26, 41, 40
2, 15	5, 3, 45	5, 15	27, 33, 45
2, 20	5, 26, 40	5, 20	28, 26, 40
2, 25	5, 50, 25	5, 25	29, 20, 25
2, 30	6, 15, 0	5, 30	30, 15, 0
2, 35	6, 40, 25	5, 35	31, 10, 25
2, 40	7, 6, 40	5, 40	32, 6, 40
2, 45	7, 33, 45	5, 45	33, 3, 45
2, 50	8, 1, 40	5, 50	34, 1, 40
2, 55	8, 30, 25	5, 55	35, 0, 25
3	9	6	36
3, 5	9, 30, 25	6, 5	37, 0, 25
3, 10	10, 1, 40	6, 10	38, 1, 40
3, 15	10, 33, 45	6, 15	39, 3, 45
3, 20	11, 6, 40	6, 20	40, 6, 40
3, 25	11, 40, 25	6, 25	41, 10, 25
3, 30	12, 15, 0	6, 30	42, 15, 0
3, 35	12, 50, 25	6, 35	43, 20, 25
3, 40	13, 26, 40	6, 40	44, 26, 40
3, 45	14, 3, 45	6, 45	45, 33, 45
3, 50	14, 41, 40	6, 50	46, 41, 40
3, 55	15, 20, 25	6, 55	47, 50, 25

From the Leo Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

n	n <sup>2</sup>	n	n <sup>2</sup>
7	49	10	1,40
7, 5	50,10,25	10, 5	1,41,40,25
7,10	51,21,40	10,10	1,43,21,40
7,15	52,33,45	10,15	1,45, 3,45
7,20	53,46,40	10,20	1,46,46,40
7,25	55, 0,25	10,25	1,48,30,25
7,30	56,15, 0	10,30	1,50,15, 0
7,35	57,30,25	10,35	1,52, 0,25
7,40	58,46,40	10,40	1,53,46,40
7,45	1, 0, 3,45	10,45	1,55,33,45
7,50	1, 1,21,40	10,50	1,57,21,40
7,55	1, 2,40,25	10,55	1,59,10,25
8	1, 4	11	2, 1
8, 5	1, 5,20,25	11, 5	2, 2,50,25
8,10	1, 6,41,40	11,10	2, 4,41,40
8,15	1, 8, 3,45	11,15	2, 6,33,45
8,20	1, 9,26,40	11,20	2, 8,26,40
8,25	1,10,50,25	11,25	2,10,20,25
8,30	1,12,15, 0	11,30	2,12,15, 0
8,35	1,13,40,25	11,35	2,14,10,25
8,40	1,15, 6,40	11,40	2,16, 6,40
8,45	1,16,33,45	11,45	2,18, 3,45
8,50	1,18, 1,40	11,50	2,20, 1,40
8,55	1,19,30,25	11,55	2,22, 0,25
9	1,21	12	2,24
9, 5	1,22,30,25	12, 5	2,26, 0,25
9,10	1,24, 1,40	12,10	2,28, 1,40
9,15	1,25,33,45	12,15	2,30, 3,45
9,20	1,27, 6,40	12,20	2,32, 6,40
9,25	1,28,40,25	12,25	2,34,10,25
9,30	1,30,15, 0	12,30	2,36,15, 0
9,35	1,31,50,25	12,35	2,38,20,25
9,40	1,33,26,40	12,40	2,40,26,40
9,45	1,35, 3,45	12,45	2,42,33,45
9,50	1,36,41,40	12,50	2,44,41,40
9,55	1,38,20,25	12,55	2,46,50,25

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA



n	n <sup>2</sup>	n	n <sup>2</sup>
3	2,49	16	4,16
3, 5	2,51,10,25	16, 5	4,18,40,25
3,10	2,53,21,40	16,10	4,21,21,40
3,15	2,55,33,45	16,15	4,24, 3,45
3,20	2,57,46,40	16,20	4,26,46,40
3,25	3, 0, 0,25	16,25	4,29,30,25
3,30	3, 2,15, 0	16,30	4,32,15, 0
3,35	3, 4,30,25	16,35	4,35, 0,25
3,40	3, 6,46,40	16,40	4,37,46,40
3,45	3, 9, 3,45	16,45	4,40,33,45
3,50	3,11,21,40	16,50	4,43,21,40
3,55	3,13,40,25	16,55	4,46,10,25
14	3,16	17	4,49
14, 5	3,18,20,25	17, 5	4,51,50,25
14,10	3,20,41,40	17,10	4,54,41,40
14,15	3,23, 3,45	17,15	4,57,33,45
14,20	3,25,26,40	17,20	5, 0,26,40
14,25	3,27,50,25	17,25	5, 3,20,25
14,30	3,30,15, 0	17,30	5, 6,15, 0
14,35	3,32,40,25	17,35	5, 9,10,25
14,40	3,35, 6,40	17,40	5,12, 6,40
14,45	3,37,33,45	17,45	5,15, 3,45
14,50	3,40, 1,40	17,50	5,18, 1,40
14,55	3,42,30,25	17,55	5,21, 0,25
15	3,45	18	5,24
15, 5	3,47,30,25	18, 5	5,27, 0,25
15,10	3,50, 1,40	18,10	5,30, 1,40
15,15	3,52,33,45	18,15	5,33, 3,45
15,20	3,55, 6,40	18,20	5,36, 6,40
15,25	3,57,40,25	18,25	5,39,10,25
15,30	4, 0,15, 0	18,30	5,42,15, 0
15,35	4, 2,50,25	18,35	5,45,20,25
15,40	4, 5,26,40	18,40	5,48,26,40
15,45	4, 8, 3,45	18,45	5,51,33,45
15,50	4,10,41,40	18,50	5,54,41,40
15,55	4,13,20,25	18,55	5,57,50,25

n	n <sup>2</sup>	n	n <sup>2</sup>
19	6, 1	22	8, 4
19, 5	6, 4, 10, 25	22, 5	8, 7, 40, 25
19, 10	6, 7, 21, 40	22, 10	8, 11, 21, 40
19, 15	6, 10, 33, 45	22, 15	8, 15, 3, 45
19, 20	6, 13, 46, 40	22, 20	8, 18, 46, 40
19, 25	6, 17, 0, 25	22, 25	8, 22, 30, 25
19, 30	6, 20, 15, 0	22, 30	8, 26, 15, 0
19, 35	6, 23, 30, 25	22, 35	8, 30, 0, 25
19, 40	6, 26, 46, 40	22, 40	8, 33, 46, 40
19, 45	6, 30, 3, 45	22, 45	8, 37, 33, 45
19, 50	6, 33, 21, 40	22, 50	8, 41, 21, 40
19, 55	6, 36, 40, 25	22, 55	8, 45, 10, 25
20	6, 40	23	8, 49
20, 5	6, 43, 20, 25	23, 5	8, 52, 50, 25
20, 10	6, 46, 41, 40	23, 10	8, 56, 41, 40
20, 15	6, 50, 3, 45	23, 15	9, 0, 33, 45
20, 20	6, 53, 26, 40	23, 20	9, 4, 26, 40
20, 25	6, 56, 50, 25	23, 25	9, 8, 20, 25
20, 30	7, 0, 15, 0	23, 30	9, 12, 15, 0
20, 35	7, 3, 40, 25	23, 35	9, 16, 10, 25
20, 40	7, 7, 6, 40	23, 40	9, 20, 6, 40
20, 45	7, 10, 33, 45	23, 45	9, 24, 3, 45
20, 50	7, 14, 1, 40	23, 50	9, 28, 1, 40
20, 55	7, 17, 30, 25	23, 55	9, 32, 0, 25
21	7, 21	24	9, 36
21, 5	7, 24, 30, 25	24, 5	9, 40, 0, 25
21, 10	7, 28, 1, 40	24, 10	9, 44, 1, 40
21, 15	7, 31, 33, 45	24, 15	9, 48, 3, 45
21, 20	7, 35, 6, 40	24, 20	9, 52, 6, 40
21, 25	7, 38, 40, 25	24, 25	9, 56, 10, 25
21, 30	7, 42, 15, 0	24, 30	10, 0, 15, 0
21, 35	7, 45, 50, 25	24, 35	10, 4, 20, 25
21, 40	7, 49, 26, 40	24, 40	10, 8, 26, 40
21, 45	7, 53, 3, 45	24, 45	10, 12, 33, 45
21, 50	7, 56, 41, 40	24, 50	10, 16, 41, 40
21, 55	8, 0, 20, 25	24, 55	10, 20, 50, 25

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

n	n <sup>2</sup>	n	n <sup>2</sup>
25	10,25	28	13, 4
25, 5	10,29,10,25	28, 5	13, 8,40,25
25,10	10,33,21,40	28,10	13,13,21,40
25,15	10,37,33,45	28,15	13,18, 3,45
25,20	10,41,46,40	28,20	13,22,46,40
25,25	10,46, 0,25	28,25	13,27,30,25
25,30	10,50,15, 0	28,30	13,32,15, 0
25,35	10,54,30,25	28,35	13,37, 0,25
25,40	10,58,46,40	28,40	13,41,46,40
25,45	11, 3, 3,45	28,45	13,46,33,45
25,50	11, 7,21,40	28,50	13,51,21,40
25,55	11,11,40,25	28,55	13,56,10,25
26	11,16	29	14, 1
26, 5	11,20,20,25	29, 5	14, 5,50,25
26,10	11,24,41,40	29,10	14,10,41,40
26,15	11,29, 3,45	29,15	14,15,33,45
26,20	11,33,26,40	29,20	14,20,26,40
26,25	11,37,50,25	29,25	14,25,20,25
26,30	11,42,15, 0	29,30	14,30,15, 0
26,35	11,46,40,25	29,35	14,35,10,25
26,40	11,51, 6,40	29,40	14,40, 6,40
26,45	11,55,33,45	29,45	14,45, 3,45
26,50	12, 0, 1,40	29,50	14,50, 1,40
26,55	12, 4,30,25	29,55	14,55, 0,25
27	12, 9	30	15
27, 5	12,13,30,25	30, 5	15, 5, 0,25
27,10	12,18, 1,40	30,10	15,10, 1,40
27,15	12,22,33,45	30,15	15,15, 3,45
27,20	12,27, 6,40	30,20	15,20, 6,40
27,25	12,31,40,25	30,25	15,25,10,25
27,30	12,36,15, 0	30,30	15,30,15, 0
27,35	12,40,50,25	30,35	15,35,20,25
27,40	12,45,26,40	30,40	15,40,26,40
27,45	12,50, 3,45	30,45	15,45,33,45
27,50	12,54,41,40	30,50	15,50,41,40
27,55	12,59,20,25	30,55	15,55,50,25

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

n	n <sup>2</sup>	n	n <sup>2</sup>
31	16, 1	34	19, 16
31, 5	16, 6, 10, 25	34, 5	19, 21, 40, 25
31, 10	16, 11, 21, 40	34, 10	19, 27, 21, 40
31, 15	16, 16, 33, 45	34, 15	19, 33, 3, 45
31, 20	16, 21, 46, 40	34, 20	19, 38, 46, 40
31, 25	16, 27, 0, 25	34, 25	19, 44, 30, 25
31, 30	16, 32, 15, 0	34, 30	19, 50, 15, 0
31, 35	16, 37, 30, 25	34, 35	19, 56, 0, 25
31, 40	16, 42, 46, 40	34, 40	20, 1, 46, 40
31, 45	16, 48, 3, 45	34, 45	20, 7, 33, 45
31, 50	16, 53, 21, 40	34, 50	20, 13, 21, 40
31, 55	16, 58, 40, 25	34, 55	20, 19, 10, 25
32	17, 4	35	20, 25
32, 5	17, 9, 20, 25	35, 5	20, 30, 50, 25
32, 10	17, 14, 41, 40	35, 10	20, 36, 41, 40
32, 15	17, 20, 3, 45	35, 15	20, 42, 33, 45
32, 20	17, 25, 26, 40	35, 20	20, 48, 26, 40
32, 25	17, 30, 50, 25	35, 25	20, 54, 20, 25
32, 30	17, 36, 15, 0	35, 30	21, 0, 15, 0
32, 35	17, 41, 40, 25	35, 35	21, 6, 10, 25
32, 40	17, 47, 6, 40	35, 40	21, 12, 6, 40
32, 45	17, 52, 33, 45	35, 45	21, 18, 3, 45
32, 50	17, 58, 1, 40	35, 50	21, 24, 1, 40
32, 55	18, 3, 30, 25	35, 55	21, 30, 0, 25
33	18, 9	36	21, 36
33, 5	18, 14, 30, 25	36, 5	21, 42, 0, 25
33, 10	18, 20, 1, 40	36, 10	21, 48, 1, 40
33, 15	18, 25, 33, 45	36, 15	21, 54, 3, 45
33, 20	18, 31, 6, 40	36, 20	22, 0, 6, 40
33, 25	18, 36, 40, 25	36, 25	22, 6, 10, 25
33, 30	18, 42, 15, 0	36, 30	22, 12, 15, 0
33, 35	18, 47, 50, 25	36, 35	22, 18, 20, 25
33, 40	18, 53, 26, 40	36, 40	22, 24, 26, 40
33, 45	18, 59, 3, 45	36, 45	22, 30, 33, 45
33, 50	19, 4, 41, 40	36, 50	22, 36, 41, 40
33, 55	19, 10, 20, 25	36, 55	22, 42, 50, 25

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

n	n <sup>2</sup>	n	n <sup>2</sup>
37	22,49	40	26,40
37, 5	22,55,10,25	40, 5	26,46,40,25
37,10	23, 1,21,40	40,10	26,53,21,40
37,15	23, 7,33,45	40,15	27, 0, 3,45
37,20	23,13,46,40	40,20	27, 6,46,40
37,25	23,20, 0,25	40,25	27,13,30,25
37,30	23,26,15, 0	40,30	27,20,15, 0
37,35	23,32,30,25	40,35	27,27, 0,25
37,40	23,38,46,40	40,40	27,33,46,40
37,45	23,45, 3,45	40,45	27,40,33,45
37,50	23,51,21,40	40,50	27,47,21,40
37,55	23,57,40,25	40,55	27,54,10,25
38	24, 4	41	28, 1
38, 5	24,10,20,25	41, 5	28, 7,50,25
38,10	24,16,41,40	41,10	28,14,41,40
38,15	24,23, 3,45	41,15	28,21,33,45
38,20	24,29,26,40	41,20	28,28,26,40
38,25	24,35,50,25	41,25	28,35,20,25
38,30	24,42,15, 0	41,30	28,42,15, 0
38,35	24,48,40,25	41,35	28,49,10,25
38,40	24,55, 6,40	41,40	28,56, 6,40
38,45	25, 1,33,45	41,45	29, 3, 3,45
38,50	25, 8, 1,40	41,50	29,10, 1,40
38,55	25,14,30,25	41,55	29,17, 0,25
39	25,21	42	29,24
39, 5	25,27,30,25	42, 5	29,31, 0,25
39,10	25,34, 1,40	42,10	29,38, 1,40
39,15	25,40,33,45	42,15	29,45, 3,45
39,20	25,47, 6,40	42,20	29,52, 6,40
39,25	25,53,40,25	42,25	29,59,10,25
39,30	26, 0,15, 0	42,30	30, 6,15, 0
39,35	26, 6,50,25	42,35	30,13,20,25
39,40	26,13,26,40	42,40	30,20,26,40
39,45	26,20, 3,45	42,45	30,27,33,45
39,50	26,26,41,40	42,50	30,34,41,40
39,55	26,33,20,25	42,55	30,41,50,25

n	n <sup>2</sup>	n	n <sup>2</sup>
43	30,49	46	35,16
43, 5	30,56,10,25	46, 5	35,23,40,25
43,10	31, 3,21,40	46,10	35,31,21,40
43,15	31,10,33,45	46,15	35,39, 3,45
43,20	31,17,46,40	46,20	35,46,46,40
43,25	31,25, 0,25	46,25	35,54,30,25
43,30	31,32,15, 0	46,30	36, 2,15, 0
43,35	31,39,30,25	46,35	36,10, 0,25
43,40	31,46,46,40	46,40	36,17,46,40
43,45	31,54, 3,45	46,45	36,25,33,45
43,50	32, 1,21,40	46,50	36,33,21,40
43,55	32, 8,40,25	46,55	36,41,19,25
44	32,16	47	36,49
44, 5	32,23,20,25	47, 5	36,56,50,25
44,10	32,30,41,40	47,10	37, 4,41,40
44,15	32,38, 3,45	47,15	37,12,33,45
44,20	32,45,26,40	47,20	37,20,26,40
44,25	32,52,50,25	47,25	37,28,20,25
44,30	33, 0,15, 0	47,30	37,36,15, 0
44,35	33, 7,40,25	47,35	37,44,10,25
44,40	33,15, 6,40	47,40	37,52, 6,40
44,45	33,22,33,45	47,45	38, 0, 3,45
44,50	33,30, 1,40	47,50	38, 8, 1,40
44,55	33,37,30,25	47,55	38,16, 0,25
45	33,45	48	38,24
45, 5	33,52,30,25	48, 5	38,32, 0,25
45,10	34, 0, 1,40	48,10	38,40, 1,40
45,15	34, 7,33,45	48,15	38,48, 3,45
45,20	34,15, 6,40	48,20	38,56, 6,40
45,25	34,22,40,25	48,25	39, 4,10,25
45,30	34,30,15, 0	48,30	39,12,15, 0
45,35	34,37,50,25	48,35	39,20,20,25
45,40	34,45,26,40	48,40	39,28,26,40
45,45	34,53, 3,45	48,45	39,36,33,45
45,50	35, 0,41,40	48,50	39,44,41,40
45,55	35, 8,20,25	48,55	39,52,50,25

n	n <sup>2</sup>	n	n <sup>2</sup>
49	40, 1	52	45, 4
49, 5	40, 9, 10, 25	52, 5	45, 12, 40, 25
49, 10	40, 17, 21, 40	52, 10	45, 21, 21, 40
49, 15	40, 25, 33, 45	52, 15	45, 30, 3, 45
49, 20	40, 33, 46, 40	52, 20	45, 38, 46, 40
49, 25	40, 42, 0, 25	52, 25	45, 47, 30, 25
49, 30	40, 50, 15, 0	52, 30	45, 56, 15, 0
49, 35	40, 58, 30, 25	52, 35	46, 5, 0, 25
49, 40	41, 6, 46, 40	52, 40	46, 13, 46, 40
49, 45	41, 15, 3, 45	52, 45	46, 22, 33, 45
49, 50	41, 23, 21, 40	52, 50	46, 31, 21, 40
49, 55	41, 31, 40, 25	52, 55	46, 40, 10, 25
50	41, 40	53	46, 49
50, 5	41, 48, 20, 25	53, 5	46, 57, 50, 25
50, 10	41, 56, 41, 40	53, 10	47, 6, 41, 40
50, 15	42, 5, 3, 45	53, 15	47, 15, 33, 45
50, 20	42, 13, 26, 40	53, 20	47, 24, 26, 40
50, 25	42, 21, 50, 25	53, 25	47, 33, 20, 25
50, 30	42, 30, 15, 0	53, 30	47, 42, 15, 0
50, 35	42, 38, 40, 25	53, 35	47, 51, 10, 25
50, 40	42, 47, 6, 40	53, 40	48, 0, 6, 40
50, 45	42, 55, 33, 45	53, 45	48, 9, 3, 45
50, 50	43, 4, 1, 40	53, 50	48, 18, 1, 40
50, 55	43, 12, 30, 25	53, 55	48, 27, 0, 25
51	43, 21	54	48, 36
51, 5	43, 29, 30, 25	54, 5	48, 45, 0, 25
51, 10	43, 38, 1, 40	54, 10	48, 54, 1, 40
51, 15	43, 46, 33, 45	54, 15	49, 3, 3, 45
51, 20	43, 55, 6, 40	54, 20	49, 12, 6, 40
51, 25	44, 3, 40, 25	54, 25	49, 21, 10, 25
51, 30	44, 12, 15, 0	54, 30	49, 30, 15, 0
51, 35	44, 20, 50, 25	54, 35	49, 39, 20, 25
51, 40	44, 29, 26, 40	54, 40	49, 48, 26, 40
51, 45	44, 38, 3, 45	54, 45	49, 57, 33, 45
51, 50	44, 46, 41, 40	54, 50	50, 6, 41, 40
51, 55	44, 55, 20, 25	54, 55	50, 15, 50, 25

n	n <sup>2</sup>	n	n <sup>2</sup>
55	50,25	58	56, 4
55, 5	50,34,10,25	58, 5	56,13,40,25
55,10	50,43,21,40	58,10	56,23,21,40
55,15	50,52,33,45	58,15	56,33, 3,45
55,20	51, 1,46,40	58,20	56,42,46,40
55,25	51,11, 0,25	58,25	56,52,30,25
55,30	51,20,15, 0	58,30	57, 2,15, 0
55,35	51,29,30,25	58,35	57,12, 0,25
55,40	51,38,46,40	58,40	57,21,46,40
55,45	51,48, 3,45	58,45	57,31,33,45
55,50	51,57,21,40	58,50	57,41,21,40
55,55	52, 6,40,25	58,55	57,51,10,25
56	52,16	59	58, 1
56, 5	52,25,20,25	59, 5	58,10,50,25
56,10	52,34,41,40	59,10	58,20,41,40
56,15	52,44, 3,45	59,15	58,30,33,45
56,20	52,53,26,40	59,20	58,40,26,40
56,25	53, 2,50,25	59,25	58,50,20,25
56,30	53,12,15, 0	59,30	59, 0,15, 0
56,35	53,21,40,25	59,35	59,10,10,25
56,40	53,31, 6,40	59,40	59,20, 6,40
56,45	53,40,33,45	59,45	59,30, 3,45
56,50	53,50, 1,40	59,50	59,40, 1,40
56,55	53,59,30,25	59,55	59,50, 0,25
57	54, 9		
57, 5	54,18,30,25		
57,10	54,28, 1,40		
57,15	54,37,33,45		
57,20	54,47, 6,40		
57,25	54,56,40,25		
57,30	55, 6,15, 0		
57,35	55,15,50,25		
57,40	55,25,26,40		
57,45	55,35, 3,45		
57,50	55,44,41,40		
57,55	55,54,20,25		

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA



Potenzen von 2von 1 bis 60

1	2	31	2, 45, 42, 3, 14, 8
2	4	32	5, 31, 24, 6, 28, 16
3	8	33	11, 2, 48, 12, 56, 32
4	16	34	22, 5, 36, 25, 53, 4
5	32	35	44, 11, 12, 51, 46, 8
6	1, 4	36	1, 28, 22, 25, 43, 32, 16
7	2, 8	37	2, 56, 44, 51, 27, 4, 32
8	4, 16	38	5, 53, 39, 42, 54, 9, 4
9	8, 32	39	11, 46, 59, 25, 48, 18, 8
10	17, 4	40	23, 33, 58, 51, 36, 36, 16
11	34, 8	41	47, 7, 57, 43, 13, 12, 32
12	1, 8, 16	42	1, 34, 15, 55, 26, 26, 25, 4
13	2, 16, 32	43	3, 8, 31, 50, 52, 52, 50, 8
14	4, 33, 4	44	6, 17, 3, 41, 45, 45, 40, 16
15	9, 6, 8	45	12, 34, 7, 23, 31, 31, 20, 32
16	18, 12, 16	46	25, 8, 14, 47, 3, 2, 41, 4
17	36, 24, 32	47	50, 16, 29, 34, 6, 5, 22, 8
18	1, 12, 49, 4	48	1, 40, 32, 59, 8, 12, 10, 44, 16
19	2, 25, 38, 8	49	3, 21, 5, 58, 16, 24, 21, 28, 32
20	4, 51, 16, 16	50	6, 42, 11, 56, 32, 48, 42, 57, 4
21	9, 42, 32, 32	51	13, 24, 23, 53, 5, 37, 25, 54, 8
22	19, 25, 5, 4	52	26, 48, 47, 46, 11, 14, 51, 48, 16
23	38, 50, 10, 8	53	53, 37, 35, 32, 22, 29, 43, 36, 32
24	1, 17, 40, 20, 16	54	1, 47, 15, 11, 4, 44, 59, 27, 13, 4
25	2, 35, 20, 40, 32	55	3, 34, 30, 22, 9, 29, 58, 54, 26, 8
26	5, 10, 41, 21, 4	56	7, 9, 0, 44, 18, 59, 57, 48, 52, 16
27	10, 21, 22, 42, 8	57	14, 18, 1, 28, 37, 59, 55, 37, 44, 32
28	20, 42, 45, 24, 16	58	28, 36, 2, 57, 15, 59, 51, 15, 29, 4
29	41, 25, 30, 48, 32	59	57, 12, 5, 54, 31, 59, 42, 30, 58, 8
30	1, 22, 51, 1, 37, 4	60	1, 54, 24, 11, 49, 3, 59, 25, 1, 56, 16

From the Otto Neugebauer papers

Courtesy of The Shelby White and Leon Levy Archives Center  
Institute for Advanced Study  
Princeton, NJ USA

Primzahlen  
bis  $60^2$

1	1,37	3,49
2	1,41	3,53
3	1,43	3,59
5	1,47	4, 1
7	1,49	4,11
11	1,53	4,17
13	2, 7	4,23
17	2,11	4,29
19	2,17	4,31
23	2,19	4,37
29	2,29	4,41
31	2,31	4,43
37	2,37	4,53
41	2,43	5, 7
43	2,47	5,11
47	2,53	5,13
53	2,59	5,17
59	3, 1	5,31
1, 1	3,11	5,37
1, 7	3,13	5,47
1,11	3,17	5,49
1,13	3,19	5,53
1,19	3,31	5,59
1,23	3,43	6, 7
1,29	3,47	6,13

From the Otto Neugebauer papers  
Courtesy of The Shelby White and Leon Levy Archives Center  
Institute for Advanced Study  
Princeton, NJ USA

6,19	9,23	12,19	15,37	18,37
6,23	9,29	12,23	15,41	18,43
6,29	9,31	12,31	15,47	18,49
6,37	9,37	12,37	15,53	19,11
6,41	9,47	12,41	16, 7	19,13
6,49	9,53	12,49	16,11	19,23
6,59	9,59	12,53	16,17	19,31
7, 1	10, 1	13, 7	16,23	19,41
7,11	10, 7	13,17	16,31	19,47
7,13	10,13	13,29	16,37	19,53
7,19	10,17	13,31	16,49	20, 1
7,23	10,19	13,41	16,53	20,13
7,29	10,31	13,43	16,59	20,17
7,37	10,41	13,47	17, 1	20,23
7,41	10,43	13,49	17,11	20,29
7,43	10,47	13,59	17,13	20,31
7,47	10,53	14,13	17,19	20,37
7,59	10,59	14,17	17,29	20,49
8, 7	11, 1	14,19	17,31	20,59
8,11	11,13	14,23	17,41	21,17
8,19	11,17	14,37	17,43	21,19
8,23	11,23	14,41	17,49	21,23
8,29	11,31	14,43	18, 7	21,29
8,41	11,41	14,47	18,11	21,31
8,43	11,49	15, 7	18,13	21,37
9, 1	11,59	15,11	18,17	21,41
9, 7	12, 7	15,19	18,23	21,43
9,17	12,13	15,29	18,29	21,47

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

21,59	25,49	29,13	33,19	37,17
22,1	25,53	29,19	33,23	37,19
22,7	25,59	29,37	33,31	37,23
22,41	26,7	29,43	33,37	37,31
22,47	26,11	29,47	33,47	37,47
22,53	26,19	29,49	33,49	37,49
23,1	26,23	30,1	33,59	37,53
23,19	26,37	30,11	34,13	38,1
23,29	26,41	30,23	34,23	38,7
23,43	26,47	30,31	34,29	38,13
23,47	26,49	30,47	34,41	38,17
23,49	26,53	31,1	34,43	38,29
23,53	26,59	31,7	34,47	38,31
23,59	27,1	31,11	34,49	38,53
24,7	27,7	31,13	34,59	38,59
24,11	27,17	31,17	35,11	39,1
24,13	27,37	31,19	35,13	39,7
24,19	27,43	31,29	35,29	39,11
24,31	27,47	31,41	35,31	39,17
24,41	27,49	31,47	35,37	39,31
24,43	28,13	31,53	35,41	39,37
24,47	28,17	32,11	35,43	39,41
24,49	28,19	32,13	35,53	39,43
24,53	28,29	32,29	36,1	39,49
24,59	28,41	32,31	36,19	39,53
25,11	28,43	32,53	36,43	39,59
25,23	28,53	32,59	36,47	40,11
25,31	29,1	33,7	36,53	40,17
25,43	29,7	33,13	37,1	40,23

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

40,37	44,43	47,59	52,1	55,59
40,41	44,47	48,7	52,17	56,1
40,47	44,49	48,17	52,43	56,11
40,59	44,53	48,23	52,47	56,13
41,7	44,59	48,29	52,49	56,29
41,13	45,7	48,37	53,1	56,31
41,17	45,11	48,47	53,7	56,47
41,43	45,13	48,59	53,11	56,53
42,1	45,19	49,13	53,23	57,13
42,11	45,29	49,17	53,29	57,29
42,19	45,31	49,23	53,37	57,37
42,23	45,41	49,29	53,41	57,41
42,29	45,49	49,31	53,49	57,43
42,31	45,53	49,59	54,11	57,47
42,37	46,7	50,1	54,13	57,49
42,59	46,17	50,11	54,17	58,11
43,11	46,29	50,19	54,19	58,19
43,13	46,31	50,23	54,31	58,31
43,29	46,37	50,37	54,59	58,37
43,37	46,41	50,41	55,1	58,47
43,41	46,43	50,49	55,7	58,49
43,53	46,59	51,1	55,13	58,53
44,7	47,13	51,7	55,19	58,59
44,17	47,17	51,19	55,23	59,1
44,19	47,23	51,23	55,29	59,7
44,23	47,31	51,29	55,31	59,17
44,31	47,37	51,49	55,43	59,19
44,37	47,41	51,59	55,47	59,31
				59,41
				59,43
				59,53

From the Q15 Neugebauer paper  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA

XI. Quadratwurzeln

	$\alpha_1$	$\beta_1$	$\alpha_2$	$\beta_2$	$\alpha_3$
2	1, 30	1, 20	1, 25	1, 24, 42, 21	1, 24, 51, 10
3	1, 44, 10	1, 43, 40, 48	1, 43, 55, 24	1, 43, 55, 22	1, 43, 55, 23
5	2, 15	2, 13, 20	2, 14, 10	2, 14, 9, 41	2, 14, 9, 50
7	2, 40	2, 37, 30	2, 38, 45	2, 38, 44, 24	2, 38, 44, 42
9	3,	3, 20	3, 10	3, 9, 28, 25	3, 9, 44, 12
11	3, 20	3, 18	3, 19	3, 18, 59, 42	3, 18, 59, 51
13	3, 36	3, 37, 6	3, 36, 33	3, 36, 7, 16	3, 36, 20, 8
15	3, 50, 24	3, 54, 22, 30	3, 52, 23, 15	3, 52, 21, 29	3, 52, 22, 22
17	4, 10	4, 5, 48	4, 7, 54	4, 6, 52, 14	4, 7, 23, 7
19	4, 20, 25	4, 22, 39, 21, 36	4, 21, 37, 10, 48	4, 21, 26, 53	4, 21, 32, 2
21	4, 33, 4	4, 36, 51, 19, 41, 15	4, 34, 57, 39, 50	4, 34, 56, 52	4, 34, 57, 16
23	4, 50	4, 47, 30	4, 47, 45	4, 47, 44, 59	4, 47, 45, 0
25					
27	5, 12, 30	5, 11, 2, 24	5, 11, 46, 12	5, 11, 46, 17	5, 11, 46, 15
29	5, 24	5, 22, 13, 20	5, 23, 6, 40	5, 23, 6, 31	5, 23, 6, 35
31					

cf. also Heiberg  
Byzant. Analekten  
Ath. 2. serch. d. M. H. 9  
(1899) p. 169 f.

[IX]

Conversion Table for hours and 'parts'

h		1P	
1	0, 2, 30 <sup>d</sup>	0, 0, 0, 8, 20 <sup>d</sup>	
2	5	16, 40	
3	7, 30	25	
4	10	33, 20	
5	12, 30	41, 40	
6	0, 15	0, 0, 0, 50	
7	17, 30	58, 20	
8	20	0, 0, 1, 6, 40	
9	22, 30	1, 15	
10	25	1, 23, 20	
11	0, 27, 30	0, 0, 1, 31, 40	
12	30	1, 40	
13	32, 30	1, 48, 20	
14	35	1, 56, 40	
15	37, 30	2, 5	
16	0, 40	0, 0, 2, 13, 20	
17	42, 30	2, 21, 40	
18	45	0, 0, 2, 30	
19	47, 30	2, 38, 20	
20	50	2, 46, 40	
21	0, 52, 30	0, 0, 3, 28, 20	
22	55	4, 10	
23	57, 30	4, 51, 40	
24	1, 0, 0	5, 33, 20	
25	1, 2, 30	0, 0, 6, 15	
26	1, 5	6, 56, 40	
27	1, 7, 30	7, 38, 20	
28	1, 10		
29	1, 12, 30		
30	1, 15		

1<sup>d</sup> = 24<sup>h</sup>  
 1<sup>h</sup> = 1080<sup>P</sup> = 18,0<sup>P</sup>

# Verwandlung von Dezimalen in Sexagesimalbrüche

Dezimalen	0	1	2	3	4	5	6	7	8	9	
0' 00 (0.50)	0, 0, (0, 30)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 01 (0.51)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 02 (0.52)	0, 1, (0, 31)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 03 (0.53)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 04 (0.54)	0, 2, (0, 32)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 05 (0.55)	0, 3, (0, 33)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 06 (0.56)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 07 (0.57)	0, 4, (0, 34)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 08 (0.58)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 09 (0.59)	0, 5, (0, 35)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 10 (0.60)	0, 6, (0, 36)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 11 (0.61)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 12 (0.62)	0, 7, (0, 37)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 13 (0.63)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 14 (0.64)	0, 8, (0, 38)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 15 (0.65)	0, 9, (0, 39)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 16 (0.66)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 17 (0.67)	0, 10, (0, 40)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 18 (0.68)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 19 (0.69)	0, 11, (0, 41)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 20 (0.70)	0, 12, (0, 42)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 21 (0.71)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 22 (0.72)	0, 13, (0, 43)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 23 (0.73)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 24 (0.74)	0, 14, (0, 44)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 25 (0.75)	0, 15, (0, 45)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 26 (0.76)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 27 (0.77)	0, 16, (0, 46)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 28 (0.78)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 29 (0.79)	0, 17, (0, 47)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 30 (0.80)	0, 18, (0, 48)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 31 (0.81)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 32 (0.82)	0, 19, (0, 49)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 33 (0.83)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 34 (0.84)	0, 20, (0, 50)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 35 (0.85)	0, 21, (0, 51)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 36 (0.86)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 37 (0.87)	0, 22, (0, 52)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 38 (0.88)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 39 (0.89)	0, 23, (0, 53)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 40 (0.90)	0, 24, (0, 54)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 41 (0.91)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 42 (0.92)	0, 25, (0, 55)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 43 (0.93)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 44 (0.94)	0, 26, (0, 56)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24
0' 45 (0.95)	0, 27, (0, 57)	0, 0	3, 36	7, 12	10, 48	14, 24	18, 0	21, 36	25, 12	28, 48	32, 24
0' 46 (0.96)		36, 0	39, 36	43, 12	46, 48	50, 24	54, 0	57, 36	1, 12	4, 48	8, 24
0' 47 (0.97)	0, 28, (0, 58)	12, 0	15, 36	19, 12	22, 48	26, 24	30, 0	33, 36	37, 12	40, 48	44, 24
0' 48 (0.98)		48, 0	51, 36	55, 12	58, 48	2, 24	6, 0	9, 36	13, 12	16, 48	20, 24
0' 49 (0.99)	0, 29, (0, 59)	24, 0	27, 36	31, 12	34, 48	38, 24	42, 0	45, 36	49, 12	52, 48	56, 24

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, N.J., USA



→ erste Stelle →

Trinfaktoren

→ zweite Stelle →

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35			
1																																							
2			=																																				
3			/																																				
4																																							
5																																							
6																																							
7																																							
8																																							
9																																							
10																																							
11																																							
12																																							
13																																							
14																																							
15																																							
16																																							
17																																							
18																																							
19																																							
20																																							
21																																							
22																																							
23																																							
24																																							
25																																							
26																																							
27																																							
28																																							
29																																							
30																																							
31																																							
32																																							
33																																							
34																																							
35																																							
36																																							
37																																							
38																																							
39																																							
40																																							
41																																							
42																																							
43																																							
44																																							
45																																							
46																																							
47																																							
48																																							
49																																							
50																																							
51																																							
52																																							

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

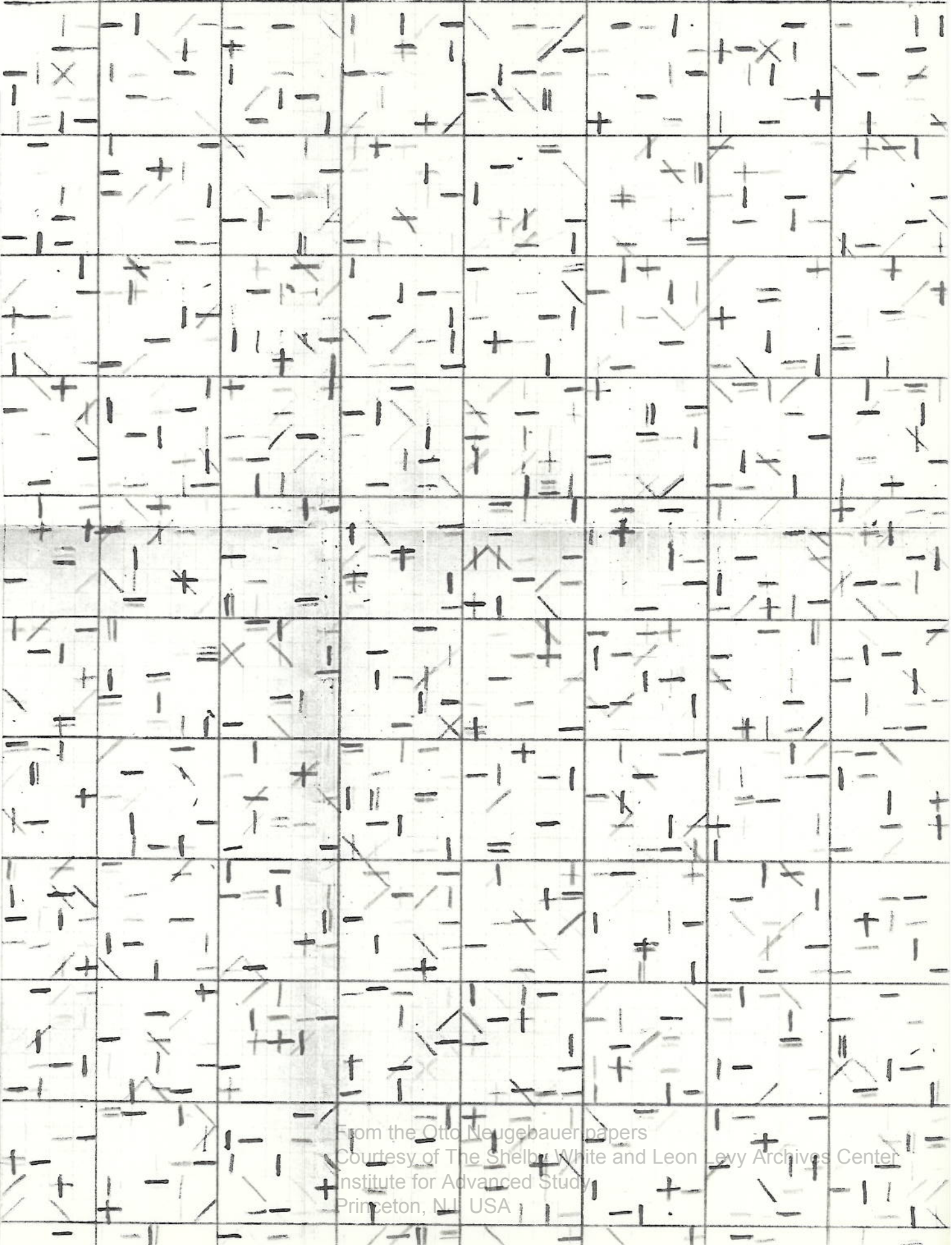
Primfaktoren

22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59

The table consists of 10 rows and 38 columns. Each cell contains a number from the header row (22 to 59) and various symbols. The symbols include: '+' (plus), '-' (minus), '=' (equals), '#' (hash), and diagonal lines (both / and \). The symbols are distributed across the grid, with some cells containing multiple symbols. For example, the cell containing '23' has a '+' symbol, and the cell containing '24' has a '-' symbol. The symbols appear to be marking off numbers that are not prime, consistent with the title 'Primfaktoren' (Prime Factors).

From the Otto Neugebauer papers  
Courtesy of The Shelby White and Leon Levy Archives Center  
Institute for Advanced Study  
Princeton, NJ USA

6585 65 90 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21



From the Otto Neugebauer papers  
Courtesy of The Shelby White and Leon Levy Archives Center  
Institute for Advanced Study  
Princeton, NJ USA

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
60																																	
59																																	
58																																	
57																																	
56																																	
55																																	
54																																	
53																																	
52																																	
51																																	
50																																	
49																																	
48																																	
47																																	
46																																	
45																																	
44																																	
43																																	
42																																	
41																																	
40																																	
39																																	
38																																	
37																																	
36																																	
35																																	
34																																	
33																																	
32																																	
31																																	
30																																	
29																																	
28																																	
27																																	
26																																	
25																																	
24																																	
23																																	
22																																	
21																																	
20																																	
19																																	
18																																	
17																																	
16																																	
15																																	
14																																	
13																																	
12																																	
11																																	
10																																	

↑ stairs

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, USA

NATURAL SEXAGESIMAL TANGENTS		TANGENTS		TANGENTS	
DEGREES	TANGENTS	DEGREES	TANGENTS	DEGREES	TANGENTS
1	0; 1, 2, 30, 17, 38	46	1; 2, 7, 54, 32, 52		
2	0; 2, 5, 42, 53, 10	47	1; 4, 20, 31, 38, 29		
3	0; 3, 8, 40, 4, 49	48	1; 6, 38, 12, 16, 12		
4	0; 4, 11, 44, 11, 29	49	1; 9, 1, 19, 34, 33		
5	0; 5, 14, 57, 33, 5	50	1; 11, 30, 18, 46, 34		
6	0; 6, 18, 22, 30, 53	51	1; 14, 5, 37, 47, 9		
7	0; 7, 22, 1, 27, 55	52	1; 16, 47, 47, 23, 33		
8	0; 8, 25, 36, 40, 13	53	1; 19, 37, 21, 40, 53		
9	0; 9, 30, 11, 2, 21	54	1; 22, 34, 58, 29, 41		
10	0; 10, 34, 46, 37, 40	55	1; 25, 41, 19, 38, 10		
11	0; 11, 39, 46, 8, 48	56	1; 28, 57, 13, 10, 9		
12	0; 12, 45, 12, 13, 2	57	1; 32, 23, 30, 40, 56		
13	0; 13, 51, 7, 31, 45	58	1; 36, 1, 12, 15, 30		
14	0; 14, 57, 34, 50, 55	59	1; 39, 51, 24, 22, 5		
15	0; 16, 4, 37, 1, 32	60	1; 43, 55, 22, 30, 28		
16	0; 17, 12, 17, 0, 12	61	1; 48, 14, 34, 18, 54		
17	0; 18, 20, 37, 49, 38	62	1; 52, 50, 36, 54, 59		
18	0; 19, 29, 42, 39, 16	63	1; 57, 45, 23, 52, 9		
19	0; 20, 39, 34, 45, 52	64	2; 3, 1, 5, 37, 47		
20	0; 21, 50, 17, 34, 14	65	2; 8, 40, 13, 29, 41		
21	0; 23, 1, 54, 37, 54	66	2; 14, 43, 43, 56, 35		
22	0; 24, 14, 29, 39, 53	67	2; 21, 21, 4, 6, 40		
23	0; 25, 28, 6, 33, 37	68	2; 28, 30, 18, 45, 37		
24	0; 26, 42, 40, 23, 46	69	2; 36, 18, 19, 14, 17		
25	0; 27, 58, 42, 27, 15	70	2; 44, 50, 53, 7, 21		
26	0; 29, 15, 50, 14, 21	71	2; 54, 15, 9, 32, 29		
27	0; 30, 34, 17, 29, 50	72	3; 4, 39, 39, 38, 39		
28	0; 31, 54, 9, 14, 14	73	3; 16, 15, 4, 9, 56		
29	0; 33, 15, 30, 43, 19	74	3; 29, 14, 41, 31, 11		
30	0; 34, 38, 27, 39, 29	75	3; 43, 55, 22, 36, 28		
31	0; 36, 3, 5, 53, 37	76	4; 0, 38, 48, 40, 54		
32	0; 37, 29, 51, 46, 48	77	4; 13, 53, 10, 47, 20		
33	0; 38, 57, 52, 2, 24	78	4; 42, 16, 40, 6, 13		
34	0; 40, 28, 13, 50, 23	79	5; 5, 40, 23, 40, 3		
35	0; 42, 0, 44, 49, 42	80	5; 40, 16, 36, 52, 23		
36	0; 43, 35, 33, 11, 10	81	6; 18, 49, 30, 19, 38		
37	0; 45, 12, 47, 40, 29	82	7; 6, 55, 19, 51, 36		
38	0; 46, 52, 37, 41, 43	83	8; 0, 39, 36, 49, 42		
39	0; 48, 33, 13, 21, 4	84	9; 30, 31, 42, 43, 20		
40	0; 50, 20, 43, 31, 13	85	11; 23, 48, 11, 17, 31		
41	0; 52, 9, 23, 56, 7	86	14; 18, 2, 23, 34, 41		
42	0; 54, 1, 27, 16, 25	87	19; 4, 52, 5, 31, 28		
43	0; 55, 57, 3, 15, 31	88	28; 59, 10, 30, 42, 33		
44	0; 57, 56, 28, 46, 31	89	57; 17, 23, 51, 42, 44		
45	1; 0, 0, 0, 0, 0	90	∞		

CONVERSION TABLE — DECIMAL FRACTIONS TO SEXAGESIMALS

n	.n	.0n	.00n	.000n	.0000n	.00000n	.000000n	.0000000n
1	0; 6	; 0, 36	; 0, 3, 36	; 0, 0, 21, 36	; 0, 0, 2, 9, 36	; 0, 0, 0, 12, 57, 36	; 0, 0, 0, 1, 17, 45, 36	; 0, 0, 0, 0, 7, 46, 33, 36
2	0; 12	; 1, 12	; 0, 7, 12	; 0, 0, 43, 12	; 0, 0, 4, 19, 12	; 0, 0, 0, 25, 55, 12	; 0, 0, 0, 2, 35, 31, 12	; 0, 0, 0, 0, 15, 33, 7, 12
3	0; 18	; 1, 48	; 0, 10, 48	; 0, 1, 4, 48	; 0, 0, 6, 28, 48	; 0, 0, 0, 38, 52, 48	; 0, 0, 0, 3, 53, 16, 48	; 0, 0, 0, 0, 23, 19, 40, 48
4	0; 24	; 2, 24	; 0, 14, 24	; 0, 1, 26, 24	; 0, 0, 8, 38, 24	; 0, 0, 0, 51, 50, 24	; 0, 0, 0, 5, 11, 2, 24	; 0, 0, 0, 0, 31, 6, 14, 24
5	0; 30	; 3, 0	; 0, 18, 0	; 0, 1, 48, 0	; 0, 0, 10, 48, 0	; 0, 0, 1, 44, 8, 0	; 0, 0, 0, 6, 28, 48, 0	; 0, 0, 0, 0, 38, 52, 48, 0
6	0; 36	; 3, 36	; 0, 21, 36	; 0, 2, 9, 36	; 0, 0, 12, 57, 36	; 0, 0, 1, 17, 45, 36	; 0, 0, 0, 7, 46, 33, 36	; 0, 0, 0, 0, 46, 39, 21, 36
7	0; 42	; 4, 12	; 0, 25, 12	; 0, 2, 31, 12	; 0, 0, 15, 7, 12	; 0, 0, 1, 30, 43, 12	; 0, 0, 0, 9, 4, 19, 12	; 0, 0, 0, 0, 54, 25, 55, 12
8	0; 48	; 4, 48	; 0, 28, 48	; 0, 2, 52, 48	; 0, 0, 17, 16, 48	; 0, 0, 1, 43, 40, 48	; 0, 0, 0, 10, 22, 4, 48	; 0, 0, 0, 0, 1, 2, 12, 28, 48
9	0; 54	; 5, 24	; 0, 32, 24	; 0, 3, 14, 24	; 0, 0, 19, 26, 24	; 0, 0, 1, 56, 38, 24	; 0, 0, 0, 11, 39, 50, 24	; 0, 0, 0, 0, 1, 9, 59, 1, 24

0; 3	0. 05	0; 33	0. 55
0; 6	0. 1	0; 36	0. 6
0; 9	0. 15	0; 39	0. 65
0; 12	0. 2	0; 42	0. 7
0; 15	0. 25	0; 45	0. 75
0; 18	0. 3	0; 48	0. 8
0; 21	0. 35	0; 51	0. 85
0; 24	0. 4	0; 54	0. 9
0; 27	0. 45	0; 57	0. 95
0; 30	0. 5	1; 0	1. 0

From the Otto Neugebauer papers  
 Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ USA



Minuten	Schatten 6°				Schatten 7°				Schatten 8°				Schatten 9°				Schatten 10°				Schatten 11°										
	P . . . . IV				P . . . . IV				P . . . . IV				P . . . . IV				P . . . . IV				P . . . . IV										
	P	.	.	IV	P	.	.	IV	P	.	.	IV	P	.	.	IV	P	.	.	IV	P	.	.	IV	P	.	.	IV			
0	6	18	22	30	53	7	22	1	27	55	8	25	56	49	13	9	30	11	2	21	10	34	46	37	40	11	39	46	8	48	
1		19	26	2	33		23	5	14	48		27	0	53	45		31	15	27	1		35	51	27	59		40	51	21	22	
2		20	29	24	27		24	9	1	57		28	4	58	36		32	19	52	2		36	56	12	42		41	56	34	23	
3		21	33	6	36		25	12	49	23		29	9	3	46		33	24	17	24		38	1	0	49		43	1	47	51	
4		22	36	38	59		26	16	37	5		30	13	9	15		34	28	43	8		39	5	49	21		44	7	1	48	
5		23	40	11	36		27	20	25	4		31	17	15	12		35	33	9	13		40	10	38	17		45	12	16	7	
6		24	43	44	27		28	24	13	19		32	21	21	9		36	37	35	40		41	15	27	37		46	17	30	56	
7		25	47	17	32		29	28	1	51		33	25	22	35		37	42	2	29		42	20	17	21		47	22	46	10	
8		26	50	55	51		30	31	50	40		34	29	24	20		38	46	29	39		43	25	7	19		48	28	1	52	
9		27	54	24	25		31	35	39	46		36	33	41	24		39	50	57	11		44	29	58	1		49	33	18	0	
10		28	57	58	13		32	39	39	9		36	37	48	47		40	55	25	5		45	34	48	57		50	38	34	35	
11		30	1	32	55		33	43	18	48		37	41	56	30		41	59	53	21		46	39	40	38		59	43	51	37	
12		31	6	6	32		34	47	8	44		38	46	4	32		43	4	21	59		47	44	32	3		52	49	9	7	
13		32	8	41	3		35	50	58	57		39	50	12	53		44	8	55	58		48	49	24	13		53	54	27	3	
14		33	12	15	49		36	54	49	27		40	54	21	34		45	13	20	19		49	54	16	43		54	59	45	27	
15		34	15	50	55		37	58	40	14		41	58	30	34		46	17	50	12		50	59	9	46		56	5	4	16	
16		35	19	27	5		39	2	31	18		43	2	39	54		47	22	20	7		52	4	3	10		57	10	23	35	
17		36	23	1	35		40	6	22	39		44	6	49	33		48	26	50	35		53	8	56	58		58	15	43	20	
18		37	26	37	19		41	10	14	17		45	10	59	32		49	31	21	24		54	13	51	11	11	11	59	21	3	33
19		38	30	13	18		42	14	6	12		46	15	9	50		47	19	20	28		55	18	45	48	12	12	0	26	24	13
20		39	33	49	32		43	17	58	25		47	19	20	28		51	40	34	8		56	23	40	50		1	31	45	20	
21		40	37	26	1		44	21	50	55		48	23	31	26		52	44	56	4		57	28	36	17		2	37	6	55	
22		41	41	2	44		45	25	43	42		49	26	42	44		53	49	28	24		58	33	32	9		3	42	28	57	
23		42	44	38	42		46	29	36	46		50	31	54	21		54	52	1	2	10	59	38	28	26		4	48	51	27	
24		43	48	16	55		47	33	30	30		51	36	6	18		55	58	34	5	11	0	43	25	7		5	53	14	24	
25		44	51	54	23		48	37	23	46		52	40	18	35		57	3	7	37		1	48	22	13		6	58	37	48	
26		45	55	32	6		49	41	17	42		53	44	31	42		58	7	41	18		2	53	19	44		8	4	1	40	
27		46	59	10	4		50	45	11	56		54	48	49	9		9	59	12	15	28	3	58	17	40		9	9	26	0	
28		48	2	48	17		51	49	6	27		55	52	57	26		10	0	16	50	1	5	3	16	2		10	14	50	48	
29		49	6	26	45		52	53	1	55		56	57	11	3		11	21	24	56		6	8	14	49		11	20	16	0	
30		50	10	5	29		53	56	57	22		58	1	24	59		2	26	0	13		7	13	14	1		12	24	41	48	
31		51	13	44	28		55	0	51	46	8	59	5	39	16		3	30	35	53		8	18	13	18		13	31	8	0	
32		52	17	23	42		56	4	47	28	9	0	9	53	55		4	35	11	56		9	23	13	41		14	36	34	40	
33		53	21	3	11		57	8	43	27		1	14	8	50		5	39	48	22		10	28	14	9		15	42	1	47	
34		54	24	42	55		58	12	39	44		2	18	24	7		6	44	25	10		11	33	15	2		16	47	29	22	
35		55	28	22	55		7	59	16	36	19		3	22	39	45		7	49	2	21		12	38	16	21		17	52	57	25
36		56	32	3	10		8	0	20	33	12		4	26	55	43		8	53	39	55		13	43	18	5		18	58	25	56
37		57	35	43	41		1	24	30	33		5	31	12	2		9	58	17	52		14	48	20	15		20	3	54	56	
38		58	39	24	27		2	28	27	52		6	35	28	41		11	2	56	12		15	53	22	50		21	9	24	24	
39		6	59	43	5	28		3	32	25	38		7	39	45	40		12	7	34	55		16	58	25	50		22	14	54	20
40		7	0	46	46	15		4	36	23	42		8	44	3	0		13	12	14	1		18	3	29	16		23	20	24	45
41		1	50	28	18		5	40	22	4		9	48	20	40		14	16	53	30		19	8	33	8		24	25	55	18	
42		2	54	10	6		6	44	20	45		10	52	18	41		15	21	33	22		20	13	37	26		25	31	27	59	
43		3	57	42	10		7	48	19	44		11	56	57	2		16	26	13	27		21	18	42	9		26	36	58	49	
44		5	1	34	30		8	52	19	1		13	1	15	44		17	30	54	16		22	23	46	18		27	42	31	7	
45		6	5	17	5		9	56	18	36		14	5	34	47		18	35	35	18		23	28	52	53		28	48	3	53	
46		7	8	58	56		11	0	18	29		15	9	54	10		19	40	16	43		24	33	58	54		29	53	37	8	
47		8	12	43	3		12	4	18	41		16	14	13	55		20	44	58	31		25	39	5	21		30	59	10	52	
48		9	16	26	26		13	8	19	11		17	18	34	0		21	49	40	43		26	44	12	14		32	4	45	4	
49		10	20	10	5		14	12	19	59		18	22	54	26		22	54	33	18		27	49	19	32		33	10	19	45	
50		11	23	54	0		15	16	21	6		19	27	15	13		23	59	6	16		28	54	27	17		34	15	54	54	
51		12	27	38	11		16	20	22	31		20	31	36	21		25	3	49	18		29	59	35	28		35	21	30	32	
52		13	31	22	38		17	24	24	55		21	35	57	50		26	8	33	23		31	4	44	5		36	27	6	40	
53		14	35	7	21		18	28	26	17		22	40	19	40		27	13	16	32		32	9	53	8		37	32	43	16	
54		15	38	52	20		19	32	28	37		23	44	41	50		28	18	2	5		33	15	2	33		38	38	20	22	
55		16	42	37	35		20	36	31	36		24	49	4	22		29	22	47	2		34	20	12	34		39	43	57	56	
56		17	46	23	6		21	40	34	14		25	53	27	15		30	27	32	22		35	25	22	56		40	49	35	59	
57		18	50	8	54		22	44	37	31		26	57	50	30		31	32	18	6		36	30	33	44		41	54	14	31	
58		19	53	54	58		23	48	41	6		28	2	14	6		32	37	4	14		37	35	44	59		43	0	53	32	
59		7	20	57	41	18		8	24	52																					

Minuten	Schatten 12°				Schatten 13°				Schatten 14°				Schatten 15°				Schatten 16°				Schatten 17°										
	P	'	"	IV	P	'	"	IV	P	'	"	IV	P	'	"	IV	P	'	"	IV	P	'	"	IV	P	'	"	IV			
0	12	45	12	13	2	13	51	7	31	45	14	57	34	50	55	16	4	37	1	32	17	12	17	0	12	18	20	37	49	38	
1		46	17	53	31		52	13	42	52		58	41	35	28		5	44	22	26		13	25	0	25		21	46	32	18	
2		47	23	34	29		53	19	54	31	14	59	48	20	36		6	51	43	58		14	33	1	19		22	55	15	41	
3		48	29	15	57		54	26	6	42	15	0	55	6	20		7	59	6	7		15	41	2	55		24	3	59	49	
4		49	34	57	54		55	32	19	25	16	2	1	52	38		9	6	28	4		16	49	5	11		25	12	44	40	
5		50	40	40	20		56	38	32	41	17	3	8	39	31		10	13	52	19		17	57	8	9		26	21	30	16	
6		51	46	23	16		57	44	46	29	18	4	15	26	59		11	21	16	22		19	5	11	47		27	30	16	36	
7		52	52	6	41		58	51	0	49	19	5	22	15	3		12	28	41	3		20	13	16	7		28	39	3	40	
8		53	58	50	16	13	59	57	15	41	20	6	29	3	42		13	36	6	23		21	21	21	8		29	47	51	29	
9		55	3	35	0	14	1	3	31	5	21	7	35	52	56		14	43	32	21		22	29	26	50		30	56	40	2	
10		56	9	19	59		2	9	47	2	22	8	42	42	45		15	50	58	57		23	37	33	13		32	5	29	20	
11		57	15	5	58		3	16	3	32	23	9	49	33	9		16	58	26	11		24	45	40	18		33	14	19	22	
12		58	20	51	11		4	22	20	34	24	10	56	24	9		18	5	54	4		25	53	48	4		34	23	10	9	
13	12	59	26	37	34		5	28	38	8	25	12	3	15	44		19	13	22	35		27	1	56	31		35	32	1	41	
14	13	0	32	23	26		6	34	56	15	26	13	10	7	55		20	20	59	45		28	10	5	40		36	40	53	57	
15		1	38	11	50		7	41	14	55	27	14	17	0	42		21	28	21	33		29	18	15	31		37	49	46	58	
16		2	43	59	43		8	47	34	7	28	15	23	54	4		22	35	52	0		30	26	26	3		38	58	40	44	
17		3	49	48	6		9	53	53	54	29	16	30	48	2		23	43	23	5		31	34	37	17		40	7	35	15	
18		4	55	36	39		11	0	14	10	30	17	37	42	35		24	50	54	49		32	42	49	13		41	16	30	31	
19		6	1	25	21		12	6	35	1	31	18	44	37	44		25	58	22	11		33	51	1	51		42	25	26	31	
20		7	7	16	14		13	14	56	25	32	19	51	33	28		26	6	0	12		34	59	15	10		43	34	23	16	
21		8	13	6	37		14	19	18	22	33	20	58	29	48		28	13	33	52		36	7	29	51		44	43	20	46	
22		9	18	57	30		15	25	40	52	34	22	5	26	44		29	21	8	11		37	15	43	54		45	52	19	2	
23		10	24	48	54		16	32	3	55	35	23	12	24	17		30	28	43	9		38	23	59	39		47	1	18	3	
24		11	30	40	48		17	38	27	31	36	24	19	22	25		31	36	18	45		39	32	15	26		48	10	17	49	
25		12	36	33	12		18	44	51	40	37	25	26	21	10		32	43	55	0		40	40	32	35		49	19	18	20	
26		13	42	26	7		19	51	16	22	38	26	33	20	31		33	51	31	55		41	48	49	46		50	28	19	37	
27		14	48	19	32		20	57	41	27	39	27	40	20	28		34	59	9	29		42	57	8	0		51	37	21	39	
28		15	54	13	28		22	4	7	26	40	28	44	21	0		36	6	47	42		44	5	26	56		52	46	24	27	
29		17	0	7	54		23	10	33	48	41	29	54	22	9		37	14	26	34		45	13	46	34		53	55	28	0	
30		18	6	2	50		24	17	0	43	42	31	1	23	54		38	22	6	5		46	22	6	54		55	4	32	18	
31		19	11	58	57		25	23	28	12	43	32	8	26	15		39	29	46	36		47	30	27	57		56	13	37	32	
32		20	17	54	15		26	29	56	14	44	33	15	29	13		40	37	22	6		48	38	49	12		57	22	43	12	
33		21	23	50	43		27	36	23	50	45	34	22	32	47		41	45	8	36		49	46	12	10		58	31	49	48	
34		22	29	47	42		28	42	53	59	46	35	29	36	58		42	52	50	45		50	55	35	20	18	59	40	57	10	
35		23	35	43	12		29	49	23	42	47	36	36	41	45		44	0	33	33		52	3	59	12	19	0	50	5	7	
36		24	41	42	13		30	55	53	59	48	37	43	47	9		45	8	17	1		53	12	23	47		1	59	14	10	
37		25	47	41	45		32	2	24	49	49	38	50	53	9		46	16	1	9		54	20	49	0		3	8	23	49	
38		26	53	40	47		33	8	56	13	50	39	57	59	46		47	23	45	56		55	29	15	30		4	17	34	15	
39		27	59	40	21		34	15	28	11	51	41	5	7	0		48	31	31	23		56	37	41	51		5	26	45	26	
40		29	5	40	26		35	22	0	42	52	42	12	50	50		49	39	17	30		57	45	9	18		6	35	57	23	
41		30	11	41	2		36	28	33	47	53	43	19	23	17		50	40	7	7	17	58	54	37	28	17	7	45	10	6	
42		31	17	42	9		37	35	7	27	54	44	26	32	21		51	54	51	43	18	0	3	6	21	18	8	54	23	36	
43		32	23	43	47		38	41	41	40	55	45	33	42	2		53	2	39	49		1	11	35	57		10	3	37	52	
44		33	29	45	46		39	48	16	28	56	46	40	52	20		54	10	28	35		2	20	6	15		11	12	54	54	
45		34	35	48	36		40	54	51	49	57	47	48	3	15		55	18	18	1		3	28	37	17		12	22	8	44	
46		35	41	51	48		42	1	27	45	58	48	55	14	47		56	26	8	9		4	37	9	2		13	31	25	7	
47		36	47	55	31		43	8	4	15	59	50	2	26	56		57	33	58	53		5	45	41	40		14	40	42	39	
48		37	53	59	46		44	14	41	19	60	51	9	49	42		58	41	60	20		6	54	14	14		15	50	0	47	
49		39	0	4	32		45	21	18	57	61	52	16	53	5	16	59	49	42	22		8	2	48	37		16	59	19	42	
50		40	6	9	49		46	27	57	10	62	53	24	7	6	17	0	57	35	35		9	11	23	15		18	8	39	23	
51		41	12	15	38		47	34	35	57	63	54	31	21	44		2	5	28	43		10	19	58	57		19	17	59	51	
52		42	18	21	58		48	41	15	19	64	55	38	36	59		3	13	22	51		11	28	34	42		20	27	21	6	
53		43	24	28	51		49	47	55	15	65	56	45	52	12		4	21	17	39		12	37	11	31		21	36	43	8	
54		44	30	36	15		50	54	35	45	66	57	53	9	22		5	29	13	7		13	45	49	4		22	46	5	57	
55		45	36	44	10		52	1	16	50	67	59	59	0	26	29		6	37	9	36		14	54	27	20		23	55	29	32
56		46	42	52	37		53	7	58	30	68	60	0	7	44	24		7	45	6	6		16	3	6	20		25	4	53	54
57		47	49	1	36		54	14	40	44	69	61	15	2	27		8	53	13	37		17	11	46	4		26	14	19	4	
58		48	55	11	7		55	21	23	33	70	62	22	21	38		10	1	1	48		18	20	26	32		27	23	45	1	













	n	.n	.0n	.00n	.000n
1	0;	6	:0,36	:0, 3,36	:0,0,21,36
2	0;12	:1,12	:0, 7,12	:0,0,43,12	
3	0;18	:1,48	:0,10,48	:0,1, 4,48	
4	0;24	:2,24	:0,14,24	:0,1,26,24	
5	0;30	:3, 0	:0,18, 0	:0,1,48, 0	
6	0;36	:3,36	:0,21,36	:0,2, 9,36	
7	0;42	:4,12	:0,25,12	:0,2,31,12	
8	0;48	:4,48	:0,28,48	:0,2,52,48	
9	0;54	:5,24	:0,32,24	:0,3,14,24	

From the Otto Neugebauer papers

Courtesy of The Shelby White and Leon Levy Archives Center  
 Institute for Advanced Study  
 Princeton, NJ, US