

F. AICARDI: ON THE NUMBER OF PERFECT BINARY QUADRATIC
FORMS-APPENDICES

Appendix 1. Table of Perfect Forms with Small Coefficients. We give here the distribution of the perfect triples (m, n, k) in the cube C_5 : $|m| \leq 5, |n| \leq 5, |k| \leq 5$.

Type	Parabolic			Elliptic		Hyperb.	Total
Signature	0, +	0,0	0, -	+, +	-, -	+, -	
Number	18	1	18	227	227	840	1331
Perfect	10	1	-	126	-	554	691

In the following tables, the square sections $k = \text{const}$ of C_5 are shown. In each cell corresponding to a triple, the value of the discriminant $D = 4mn - k^2$ is given at the top part of the cell. A star indicates that the triple is perfect. Information on the semigroup—if available—is included: the number 1 simply indicates that value 1 is attained, otherwise the semigroup itself is given, when it is simple. For example, $5\mathbb{Z}$, the multiplicative semigroup of the integers divisible by 5, or \mathbb{Z}^2 , the semigroup of the squares of integers.

Remark. If the form $f_{(m,n,k)}$ is perfect, then the form $f_{(n,m,-k)}$ is also perfect (the two triples are in the same orbit of $\text{SL}(2, \mathbb{Z})$ -action). Because of the symmetry of the family of forms ($f_{(m,n,k)}(x, y) = f_{(n,m,k)}(y, x)$), it is clear that the sets of values attained by $f_{(m,n,k)}$ and by $f_{(m,n,-k)}$ coincide, so the perfectness of (m, n, k) implies the perfectness of $(m, n, -k)$. For this reason, the two tables with opposite values of k are identical.

Appendix 2. Table of Quadruples (a, b, c, d) for All Perfect Forms in the Cube C_5 . Integers x, y are the coordinates of a vector \mathbf{v} such that $f(\mathbf{v}) = 1$.

Appendix 3. Table of Quadruples (a, b, c, d) for Perfect Diagonal Forms with $m \leq n \leq 16$. Integers x, y are the coordinates of a vector \mathbf{v} such that $f(\mathbf{v}) = 1$.

Remember that if the quadruple (a, b, c, d) defines the perfect triple $(m, n, 0)$, the triple $(n, m, 0)$ is defined by the quadruple (c, d, a, b) (see Appendix 2 in [Aicardi 03]).

REFERENCES

[Aicardi 03] F. Aicardi. “On Trigroups and Semigroups of Binary Quadratic Forms Values and of Their Associated Linear Operators.” Preprint, 2003.

APPENDIX 1

$k = 0$											
$m \Rightarrow$ $n \Downarrow$	-5	-4	-3	-2	-1	0	1	2	3	4	5
5	-100 ★ 5	-80 ★ 1	-60	-40	-20 ★ 1	0	20 ★ 1	40	60	80	100 ★ 5
4	-80	-64 ★	-48 ★ 1	-32 ★ 2	-16	0 ★ $4\mathbb{Z}^2$	16 ★ 1	32 ★ 2	48	64 ★ 4	80
3	-60	-48	-36 ★ 3	-24 ★ 1	-12	0	12 ★ 1	24	36	48	60
2	-40	-32 ★ 2	-24	-16	-8 ★ 1	0	8 ★ 1	16 ★ 2	24	32 ★ 2	40
1	-20 ★ 1	-16 ★ 1	-12 ★ 1	-8 ★ 1	-4 ★ 1	0 ★ \mathbb{Z}^2	4 ★ 1	8 ★ 1	12 ★ 1	16 ★ 1	20 ★ 1
0	0	0	0	0	0	0 ★ 0	0 ★ \mathbb{Z}^2	0	0	0 ★ $4\mathbb{Z}^2$	0
-1	20	16	12	8	4	0	-4 ★ 1	-8 ★ 1	-12	-16	-20 ★ 1
-2	40	32	24	16	8	0	-8 ★ 1	-16	-24 ★ 1	-32 ★ 2	-40
-3	60	48	36	24	12	0	-12 ★ 1	-24	-36 ★ 3	-48 ★ 1	-60
-4	80	64	48	32	16	0	-16 ★ 1	-32 ★ 2	-48	-64 ★	-80 ★ 1
-5	100	80	60	40	20	0	-20 ★ 1	-40	-60	-80	-100 ★ 5

$k = \pm 1$											
$m \Rightarrow$ $n \Downarrow$	-5	-4	-3	-2	-1	0	1	2	3	4	5
5	-101 ★ 1	-81	-61 ★ 1	-41 ★ 1	-21	-1 ★Z	19 ★ 1	39	59 ★	79	99
4	-81 ★	-65 ★ 1	-49 ★	-33 ★ 1	-17 ★ 1	-1 ★Z	15 ★ 1	31 ★	47	63	79
3	-61 ★ 1	-49	-37 ★ 1	-25	-13 ★ 1	-1 ★Z	11 ★ 1	23 ★	35	47	59 ★
2	-41 ★ 1	-33	-25	-17 ★ 1	-9	-1 ★Z	7 ★ 1	15	23 ★	31 ★	39
1	-21 ★ 1	-17 ★ 1	-13 ★ 1	-9 ★ 1	-5 ★ 1	-1 ★Z	3 ★ 1	7 ★ 1	11 ★ 1	15 ★ 1	19 ★ 1
0	-1 ★Z	-1 ★Z	-1 ★Z	-1 ★Z	-1 ★Z	-1 ★Z	-1 ★Z	-1 ★Z	-1 ★Z	-1 ★Z	-1 ★Z
-1	19	15	11	7	3	-1 ★Z	-5 ★ 1	-9	-13 ★ 1	-17 ★ 1	-21
-2	39	31	23	15	7	-1 ★Z	-9 ★ 1	-17 ★ 1	-25	-33 ★ 1	-61 ★ 1
-3	59	47	35	23	11	-1 ★Z	-13 ★ 1	-25	-37 ★ 1	-49 ★	-61 ★ 1
-4	79	63	47	31	15	-1 ★Z	-17 ★ 1	-33	-49	-65 ★ 1	-81
-5	99	79	59	39	19	-1 ★Z	-21 ★ 1	-41 ★ 1	-61 ★ 1	-81 ★	-101 ★ 1

$k = \pm 2$											
$m \Rightarrow$ $n \Downarrow$	-5	-4	-3	-2	-1	0	1	2	3	4	5
5	-104	-84	-64	-44 ★ 1	-24	-4 ★ 1	16 ★ 1	36	56	76 ★	96
4	-84 ★ 1	-68 ★ 2	-52 ★ 1	-36 ★	-20 ★ 1	-4 ★ 2 \mathbb{Z}	12 ★ 1	28 ★ 2	44 ★	60 ★	76 ★
3	-64	-52 ★ 1	-40	-28	-16	-4 ★ 1	8 ★ 1	20	32	44 ★	56
2	-44	-36	-28 ★ 1	-20	-12	-4 ★ 2 \mathbb{Z}	4 ★ 1	12	20	28 ★ 2	36
1	-24 ★ 1	-20 ★ 1	-16 ★ 1	-12 ★ 1	-8 ★ 1	-4 ★ 1	0 ★ \mathbb{Z}^2	4 ★ 1	8 ★ 1	12 ★ 1	16 ★ 1
0	-4 ★ 1	-4 ★ 2 \mathbb{Z}	-4 ★ 1	-4 ★ 2 \mathbb{Z}	-4 ★ 1	-4 ★ 2 \mathbb{Z}	-4 ★ 1	-4 ★ 2 \mathbb{Z}	-4 ★ 1	-4 ★ 2 \mathbb{Z}	-4 ★ 1
-1	16	12	8	4	0	-4 ★ 1	-8 ★ 1	-12	-16	-20 ★ 1	-24
-2	36	28	20	12	4	-4 ★ 2 \mathbb{Z}	-12 ★ 1	-20	-28	-36 ★	-44 ★ 1
-3	56	44	32	20	8	-4 ★ 1	-16 ★ 1	-28 ★ 1	-40	-52 ★ 1	-64
-4	76	60	44	28	12	-4 ★ 2 \mathbb{Z}	-20 ★ 1	-36	-52 ★ 1	-68 ★ 2	-84
-5	96	76	56	36	16	-4 ★ 1	-24 ★ 1	-44	-64	-84 ★ 1	-104

$k = \pm 3$											
$m \Rightarrow$ $n \Downarrow$	-5	-4	-3	-2	-1	0	1	2	3	4	5
5	-109 ★ 1	-89 ★ 1	-69	-49	-29 ★ 1	-9	11 ★ 1	31 ★	51	71	91
4	-89 ★ 1	-73 ★ 1	-57 ★ 1	-41 ★ 1	-25	-9 ★ 1	7 ★ 1	23 ★	39	55	71
3	-69 ★ 1	-57	-45	-33 ★ 1	-21	-9 ★3Z	3 ★ 1	15	27 ★ 3	39	51
2	-49 ★	-41 ★ 1	-33	-25	-17 ★ 1	-9	-1 ★Z	7 ★ 1	15	23 ★	31 ★
1	-29 ★ 1	-25 ★ 1	-21 ★ 1	-17 ★ 1	-13 ★ 1	-9 ★ 1	-5 ★ 1	-1 ★Z	3 ★ 1	7 ★1	11 ★ 1
0	-9 ★ 1	-9	-9 ★3Z	-9 ★ 1	-9	-9 ★3Z	-9 ★ 1	-9	-9 ★3Z	-9 ★ 1	-9
-1	11	7	3	-1 ★Z	-5 ★ 1	-9	-13 ★ 1	-17 ★ 1	-21	-25	-29 ★ 1
-2	31	23	15	7	-1 ★Z	-9 ★ 1	-17 ★ 1	-25	-33 ★ 1	-41 ★ 1	-49
-3	51	39	27	15	3	-9 ★3Z	-21 ★ 1	-33	-45	-57 ★ 1	-69
-4	71	55	39	23	7	-9	-25 ★ 1	-41 ★ 1	-57	-73 ★1	-89 ★1
-5	91	71	51	31	11	-9 ★ 1	-29 ★ 1	-49 ★	-69 ★ 1	-89 ★ 1	-109 ★ 1

$k = \pm 4$											
$m \Rightarrow$ $n \Downarrow$	-5	-4	-3	-2	-1	0	1	2	3	4	5
5	-116 ★ 1	-96	-76 ★ 1	-56	-36	-16 ★ 1	4 ★ 1	24	44 ★	64	84
4	-96	-80 ★ 4	-64	-48 ★	-32	-16 ★ 4Z	0 ★ Z ²	16 ★ 2	32	48 ★ 4	64
3	-76	-64	-52 ★ 1	-40	-28	-16	-4 ★ 1	8 ★ 1	20	32	44 ★
2	-56 ★ 1	-48	-40	-32 ★ 2	-24	-16	-8 ★ 1	0	8 ★ 1	16 ★ 2	24
1	-36 ★ 1	-32 ★ 1	-28 ★ 1	-24 ★ 1	-20 ★ 1	-16 ★ 1	-12 ★ 1	-8 ★ 1	-4 ★ 1	0 ★ Z ²	4 ★ 1
0	-16	-16 ★ 4Z	-16 ★ 1	-16	-16	-16 ★ 4Z	-16 ★ 1	-16	-16	-16 ★ 4Z	-16 ★ 1
-1	4	0	-4 ★ 1	-8 ★ 1	-12	-16	-20 ★ 1	-24	-28	-32	-36
-2	24	16	8	0	-8 ★ 1	-16	-24 ★ 1	-32 ★ 2	-40	-48 ★	-56
-3	44	32	20	8	-4 ★ 1	-16 ★ 1	-28 ★ 1	-40	-52 ★ 1	-64	-76 ★ 1
-4	64	48	32	16	0	-16 ★ 4Z	-32 ★ 1	-48	-64	-80 ★ 4	-96
-5	84	64	44	24	4	-16	-36 ★ 1	-56 ★ 1	-76	-96	-116 ★ 1

$k = \pm 5$											
$m \Rightarrow$ $n \Downarrow$	-5	-4	-3	-2	-1	0	1	2	3	4	5
5	-125 ★ 5	-105	-85	-65	-45	-25 ★5Z	-5 ★ 1	15	35	55	75
4	-105 ★ 1	-89 ★	-73 ★ 1	-57 ★ 1	-41 ★ 1	-25	-9 ★ 1	7 ★ 1	23 ★	39	55
3	-85	-73 ★ 1	-61 ★ 1	-49	-37 ★ 1	-25	-13 ★ 1	-1 ★Z	11 ★ 1	23 ★	35
2	-65	-57	-49 ★	-41 ★ 1	-33	-25	-17 ★ 1	-9	-1 ★Z	7 ★ 1	15
1	-45 ★ 1	-41 ★ 1	-37 ★ 1	-33 ★ 1	-29 ★ 1	-25 ★1	-21 ★ 1	-17 ★ 1	-13 ★ 1	-9 ★ 1	-5 ★ 1
0	-25 ★5Z	-25 ★1	-25	-25	-25	-25 ★5Z	-25 ★1	-25	-25	-25	-25 ★5Z
-1	-5 ★1	-9	-13 ★ 1	-17 ★1	-21	-25	-29 ★ 1	-33	-37 ★ 1	-41 ★ 1	-45
-2	15	7	-1 ★Z	-9 ★1	-17 ★ 1	-25	-33 ★1	-41 ★ 1	-49	-57 ★1	-65
-3	35	23	11	-1 ★Z	-13 ★ 1	-25	-37 ★ 1	-49 ★	-61 ★ 1	-73 ★ 1	-85
-4	55	39	23	7	-9	-25 ★ 1	-41 ★ 1	-57	-73 ★ 1	-89 ★ 1	-105
-5	75	55	35	15	-5 ★ 1	-25 ★5Z	-45 ★1	-65	-85	-105 ★1	-125 ★ 5

APPENDIX 2

$D > 0$																			
$k = 0$					$k = 0$														
m	n	k	a	b	c	d	x	y		m	n	k	a	b	c	d	x	y	
1	1	0	0	0	1	-1	1	0		2	4	0	0	0	2	-1	-	-	
1	2	0	1	-2	0	0	1	0		3	1	0	0	0	1	-3	0	1	
1	3	0	1	-3	0	0	1	0		4	1	0	0	0	1	-4	0	1	
1	4	0	1	-4	0	0	1	0		4	2	0	2	-1	0	0	-	-	
1	5	0	1	-5	0	0	1	0		4	4	0	0	0	2	-2	-	-	
2	1	0	0	0	1	-2	0	1		5	1	0	0	0	1	-5	0	1	
2	2	0	1	-1	1	-1	-	-		5	5	0	1	-1	2	-2	-	-	
$k = 1$					$k = -1$														
m	n	k	a	b	c	d	x	y		m	n	k	a	b	c	d	x	y	
1	1	1	0	1	1	-1	1	-1		1	1	-1	0	1	-1	1	1	1	
1	2	1	1	-1	1	0	1	0		1	2	-1	1	-1	-1	0	1	0	
1	3	1	1	-2	1	0	1	0		1	3	-1	1	-2	-1	0	1	0	
1	4	1	1	-3	1	0	1	0		1	4	-1	1	-3	-1	0	1	0	
1	5	1	1	-4	1	0	1	0		1	5	-1	1	-4	-1	0	1	0	
2	1	1	1	0	1	-1	0	1		2	1	-1	1	0	-1	1	0	1	
2	3	1	1	-2	-1	1	-	-		2	3	-1	1	-2	1	-1	-	-	
2	4	1	0	1	2	-1	-	-		2	4	-1	0	-1	2	-1	-	-	
3	1	1	1	0	1	-2	0	1		3	1	-1	1	0	-1	2	0	1	
3	2	1	1	-1	-1	2	-	-		3	2	-1	1	-1	1	-2	-	-	
3	5	1	1	-1	2	-1	-	-		3	5	-1	1	-1	-2	1	-	-	
4	1	1	1	0	1	-3	0	1		4	1	-1	1	0	-1	3	0	1	
4	2	1	2	-1	0	1	-	-		4	2	-1	2	-1	0	-1	-	-	
5	1	1	1	0	1	-4	0	1		5	1	-1	-1	0	1	-4	0	1	
5	3	1	2	-1	1	-1	-	-		5	3	-1	2	-1	-1	1	-	-	
$k = 2$					$k = -2$														
m	n	k	a	b	c	d	x	y		m	n	k	a	b	c	d	x	y	
1	2	2	1	2	2	0	1	-1		1	2	-2	1	2	-2	0	1	1	
1	3	2	1	1	2	0	1	0		1	3	-2	1	1	-2	0	1	0	
1	4	2	1	0	2	0	1	0		1	4	-2	1	0	-2	0	1	0	
1	5	2	1	-1	2	0	1	0		1	5	-2	-1	1	2	0	1	0	
2	1	2	0	1	1	-2	1	-1		2	1	-2	0	-1	1	-2	1	1	
2	4	2	0	2	2	-1	-	-		2	4	-2	0	-2	2	-1	-	-	
3	1	2	2	0	1	1	0	1		3	1	-2	-2	0	1	1	0	1	
3	4	2	1	0	2	-1	-	-		3	4	-2	-1	0	2	-1	-	-	
4	1	2	2	0	1	0	0	1		4	1	-2	2	0	-1	0	0	1	
4	2	2	1	-1	-1	3	-	-		4	2	-2	-1	1	-1	3	-	-	
4	3	2	2	-1	1	0	-	-		4	3	-2	2	-1	-1	0	-	-	

$D > 0$									
$k = 2$					$k = -2$				
m	n	k	a	b	c	d	x	y	
4	4	2	0	1	2	-2	-	-	
4	5	2	2	-2	1	0	-	-	
5	1	2	2	0	1	-1	0	1	
5	4	2	1	0	2	-2	-	-	
m	n	k	a	b	c	d	x	y	
4	4	-2	0	-1	2	-2	-	-	
4	5	-2	2	-2	-1	0	-	-	
5	1	-2	-2	0	1	-1	0	1	
5	4	-2	-1	0	2	-2	-	-	
$k = 3$					$k = -3$				
m	n	k	a	b	c	d	x	y	
1	3	3	1	-3	0	1	1	0	
1	4	3	1	5	3	0	1	0	
1	5	3	1	4	3	0	1	0	
2	2	3	2	1	2	1	1	-1	
2	4	3	0	3	2	-1	-	-	
2	5	3	1	-4	-1	1	-	-	
3	1	3	0	1	1	-3	1	-1	
3	3	3	1	1	2	-1	-	-	
4	1	3	3	0	1	5	0	1	
4	2	3	2	-1	0	3	-	-	
5	1	3	3	0	1	4	0	1	
5	2	3	1	-1	-1	4	-	-	
m	n	k	a	b	c	d	x	y	
1	3	-3	1	-3	0	-1	1	0	
1	4	-3	1	5	-3	0	1	0	
1	5	-3	1	4	-3	0	1	0	
2	2	-3	2	1	2	1	1	1	
2	4	-3	0	-3	2	-1	-	-	
2	5	-3	1	-4	1	-1	-	-	
3	1	-3	0	-1	1	-3	1	1	
3	3	-3	1	1	-2	1	-	-	
4	1	-3	-3	0	1	5	0	1	
4	2	-3	2	-1	0	-3	-	-	
5	1	-3	-3	0	1	4	0	1	
5	2	-3	1	-1	1	-4	-	-	
$k = 4$					$k = -4$				
m	n	k	a	b	c	d	x	y	
1	5	4	2	2	3	1	2	-1	
2	3	4	2	-1	1	2	1	-1	
2	4	4	0	4	2	-1	-	-	
3	2	4	1	2	2	-1	1	-1	
3	5	4	2	-2	1	1	-	-	
4	2	4	2	1	2	0	-	-	
4	4	4	0	2	2	-2	-	-	
5	1	4	3	1	2	2	1	-2	
5	3	4	1	1	2	-2	-	-	
m	n	k	a	b	c	d	x	y	
1	5	-4	2	2	-3	-1	2	1	
2	3	-4	-2	1	1	2	1	1	
2	4	-4	0	-4	2	-1	-	-	
3	2	-4	1	2	-2	1	1	1	
3	5	-4	-2	2	1	1	-	-	
4	2	-4	2	1	-2	0	-	-	
4	4	-4	0	-2	2	-2	-	-	
5	1	-4	3	1	-2	-2	1	2	
5	3	-4	1	1	-2	2	-	-	
$k = 5$					$k = -5$				
m	n	k	a	b	c	d	x	y	
2	4	5	0	5	2	-1	1	-1	
3	3	5	3	2	3	2	1	-1	
3	4	5	1	-3	-1	2	-	-	
4	2	5	2	-1	0	5	1	-1	
4	3	5	1	-2	-1	3	-	-	
m	n	k	a	b	c	d	x	y	
2	4	-5	0	-5	2	-1	1	1	
3	3	-5	3	2	-3	-2	1	1	
3	4	-5	1	-3	1	-2	-	-	
4	2	-5	2	-1	0	-5	1	1	
4	3	-5	1	-2	1	-3	-	-	

$D = 0$																	
$k = 0$							$k = 0$										
m	n	k	a	b	c	d	x	y	m	n	k	a	b	c	d	x	y
0	0	0	0	0	0	0	-	-	1	0	0	1	0	0	0	1	0
0	1	0	0	0	1	0	0	1	4	0	0	2	0	0	0	-	-
0	4	0	0	0	2	0	-	-									
$k = 2$							$k = -2$										
m	n	k	a	b	c	d	x	y	m	n	k	a	b	c	d	x	y
1	1	2	1	3	2	0	3	-2	1	1	-2	1	3	-2	0	3	2
$k = 4$							$k = -4$										
m	n	k	a	b	c	d	x	y	m	n	k	a	b	c	d	x	y
1	4	4	3	4	4	2	1	-1	1	4	-4	3	4	-4	-2	1	1
4	1	4	4	2	3	4	1	-1	4	1	-4	4	2	-3	-4	1	1
$D < 0$																	
$k = 0$							$k = 0$										
m	n	k	a	b	c	d	x	y	m	n	k	a	b	c	d	x	y
-5	1	0	0	0	-1	-5	0	1	1	-1	0	1	1	0	0	1	0
-5	5	0	2	2	-3	-3	-	-	1	-2	0	1	2	0	0	1	0
-4	1	0	0	0	-1	-4	0	1	1	-3	0	1	3	0	0	1	0
-4	2	0	2	1	-2	-4	-	-	1	-4	0	1	4	0	0	1	0
-4	4	0	0	0	-2	-2	-	-	1	-5	0	1	5	0	0	1	0
-4	5	0	4	5	-5	-4	1	1	2	-1	0	2	1	-1	-2	1	1
-3	1	0	0	0	-1	-3	0	1	2	-4	0	2	4	-2	-1	-	-
-3	3	0	1	1	-2	-2	-	-	3	-2	0	3	2	-2	-3	1	1
-3	4	0	3	4	-4	-3	1	1	3	-3	0	2	2	-1	-1	-	-
-2	1	0	0	0	-1	-2	0	1	4	-2	0	2	1	0	0	-	-
-2	3	0	2	3	-3	-2	1	1	4	-3	0	4	3	-3	-4	1	1
-2	4	0	0	0	-2	-1	-	-	4	-4	0	2	2	0	0	-	-
-1	1	0	0	0	-1	-1	0	1	5	-1	0	5	1	-2	-10	1	2
-1	2	0	1	2	-2	-1	1	1	5	-4	0	5	4	-4	-5	1	1
-1	5	0	2	10	-5	-1	2	1	5	-5	0	3	3	-2	-2	-	-
$k = 1$							$k = -1$										
m	n	k	a	b	c	d	x	y	m	n	k	a	b	c	d	x	y
-5	0	1	-25	-1	5	126	1	6	-5	0	-1	25	1	5	126	-1	6
-5	1	1	-3	-1	2	7	-1	3	-5	1	-1	3	1	2	7	1	3
-5	2	1	31	17	-23	-42	-1	2	-5	2	-1	31	17	23	42	1	2
-5	3	1	1	1	-2	-3	-2	3	-5	3	-1	1	1	2	3	2	3
-5	4	1	11	7	9	14	-	-	-5	4	-1	11	7	-9	-14	-	-
-5	5	1	5	4	5	6	1	1	-5	5	-1	5	4	-5	-6	1	-1
-4	0	1	-16	-1	4	65	1	5	-4	0	-1	16	1	4	65	-1	5
-4	1	1	1	0	1	5	0	1	-4	1	-1	-1	0	1	5	0	1

$D < 0$									
$k = 1$					$k = -1$				
m	n	k	a	b	c	d	x	y	
-4	4	1	4	3	4	5	1	1	
-3	0	1	9	1	-3	-28	1	4	
-3	1	1	1	0	1	4	0	1	
-3	3	1	3	2	3	4	1	1	
-3	4	1	-5	-9	7	4	-	-	
-3	5	1	19	41	-28	-13	-1	1	
-2	0	1	-4	-1	2	9	1	3	
-2	1	1	1	0	1	3	1	0	
-2	2	1	2	1	2	3	1	1	
-2	4	1	0	1	-2	-1	1	-1	
-2	5	1	1	4	-3	-1	4	-3	
-1	0	1	1	1	-1	-2	1	2	
-1	1	1	0	-1	1	1	1	1	
-1	3	1	1	1	2	1	-1	1	
-1	4	1	3	7	5	2	3	-2	
0	0	1	0	1	0	-1	1	1	
0	1	1	1	0	1	1	0	1	
0	2	1	2	7	4	1	1	-1	
0	3	1	3	26	9	1	2	-1	
0	4	1	4	63	16	1	3	-1	
0	5	1	5	124	25	1	4	-1	
0	-1	1	-1	-2	1	1	2	1	
0	-2	1	2	9	-4	-1	3	1	
0	-3	1	3	28	-9	-1	4	1	
0	-4	1	4	65	-16	-1	5	1	
0	-5	1	5	126	-25	-1	6	1	
1	0	1	1	0	1	1	1	0	
1	-1	1	-1	-1	0	1	1	1	
1	-2	1	1	3	1	0	1	0	
1	-3	1	1	4	1	0	1	0	
1	-4	1	1	5	1	0	1	0	
1	-5	1	2	7	-3	-1	3	-1	
2	0	1	4	1	2	7	1	-1	
2	-2	1	2	3	2	1	1	1	
2	-5	1	-23	-42	31	17	2	-1	
3	0	1	9	1	3	26	1	-2	
3	-1	1	2	1	1	1	1	-1	
3	-3	1	3	4	3	2	1	1	
-4	4	-1	4	3	-4	-5	1	-1	
-3	0	-1	9	1	3	28	-1	4	
-3	1	-1	-1	0	1	4	0	1	
-3	3	-1	3	2	-3	-4	1	-1	
-3	4	-1	5	9	7	4	-	-	
-3	5	-1	19	41	28	13	1	1	
-2	0	-1	4	1	2	9	1	-3	
-2	1	-1	-1	0	1	3	1	0	
-2	2	-1	2	1	-2	-3	1	-1	
-2	4	-1	0	1	2	1	1	1	
-2	5	-1	1	4	3	1	4	3	
-1	0	-1	1	1	1	2	1	-2	
-1	1	-1	0	1	1	1	1	-1	
-1	3	-1	1	1	-2	-1	1	1	
-1	4	-1	3	7	-5	-2	3	2	
0	0	-1	0	1	0	1	1	-1	
0	1	-1	-1	0	1	1	0	1	
0	2	-1	2	7	-4	-1	1	1	
0	3	-1	3	26	-9	-1	2	1	
0	4	-1	4	63	-16	-1	3	1	
0	5	-1	5	124	-25	-1	4	1	
0	-1	-1	1	2	1	1	2	-1	
0	-2	-1	2	9	4	1	3	1	
0	-3	-1	3	28	9	1	4	-1	
0	-4	-1	4	65	16	1	5	1	
0	-5	-1	5	126	25	1	6	-1	
1	0	-1	-1	0	1	1	1	0	
1	-1	-1	1	1	0	1	1	-1	
1	-2	-1	1	3	-1	0	1	0	
1	-3	-1	1	4	-1	0	1	0	
1	-4	-1	1	5	-1	0	1	0	
1	-5	-1	2	7	3	1	3	1	
2	0	-1	4	1	-2	-7	1	1	
2	-2	-1	2	3	-2	-1	1	-1	
2	-5	-1	23	42	31	17	2	1	
3	0	-1	-9	-1	3	26	1	2	
3	-1	-1	2	1	-1	-1	1	1	
3	-3	-1	3	4	-3	-2	1	-1	

$D < 0$									
$k = 1$					$k = -1$				
m	n	k	a	b	c	d	x	y	
3	-5	1	-2	-3	1	1	-3	2	
4	0	1	16	1	4	63	1	-3	
4	-1	1	5	2	3	7	2	-3	
4	-2	1	2	1	0	-1	1	-1	
4	-3	1	7	4	-5	-9	-	-	
4	-4	1	4	5	4	3	1	1	
4	-5	1	9	14	11	7	-	-	
5	0	1	25	1	5	124	1	-4	
5	-2	1	-3	-1	1	4	3	-4	
5	-3	1	28	13	-19	-41	1	-1	
5	-5	1	5	6	5	4	1	1	
$k = 2$					$k = -2$				
m	n	k	a	b	c	d	x	y	
-5	0	2	25	4	-10	-65	1	3	
-5	1	2	2	0	1	9	0	1	
-5	4	2	1	0	2	3	1	1	
-4	0	2	-8	-2	4	17	-	-	
-4	1	2	2	0	1	8	4	5	
-4	3	2	26	11	17	40	1	1	
-4	4	2	0	1	-2	-2	-	-	
-3	0	2	9	4	-6	-14	1	2	
-3	1	2	-2	0	1	7	0	1	
-3	2	2	1	2	-2	-2	1	1	
-3	4	2	1	0	2	2	3	2	
-2	0	2	1	1	-1	-3	-	-	
-2	1	2	0	1	-1	-2	1	1	
-2	4	2	0	-2	2	1	-	-	
-2	5	2	2	2	3	2	-1	1	
-1	0	2	1	4	-2	-1	1	1	
-1	1	2	0	2	-1	-1	2	1	
-1	4	2	1	0	2	1	-1	1	
0	0	2	0	1	0	-2	-	-	
0	1	2	2	0	1	4	0	1	
0	2	2	1	-1	1	1	-	-	
0	3	2	6	13	9	4	1	-1	
0	4	2	4	15	8	2	-	-	
0	5	2	10	62	25	4	2	-1	
0	-1	2	2	1	-1	-4	1	1	
m	n	k	a	b	c	d	x	y	
-5	0	-2	25	4	10	65	-1	3	
-5	1	-2	-2	0	1	9	0	1	
-5	4	-2	-1	0	2	3	1	-1	
-4	0	-2	8	2	4	17	-	-	
-4	1	-2	2	0	-1	8	4	-5	
-4	3	-2	26	11	-17	-40	1	-1	
-4	4	-2	0	1	2	2	-	-	
-3	0	-2	9	4	6	14	-1	2	
-3	1	-2	2	0	1	7	0	1	
-3	2	-2	1	2	2	2	1	-1	
-3	4	-2	-1	0	2	2	3	-2	
-2	0	-2	1	1	1	3	-	-	
-2	1	-2	0	1	1	2	1	-1	
-2	4	-2	0	2	2	1	-	-	
-2	5	-2	2	2	-3	-2	1	1	
-1	0	-2	1	4	2	1	1	-1	
-1	1	-2	0	2	1	1	2	-1	
-1	4	-2	-1	0	2	1	1	1	
0	0	-2	0	1	0	2	-	-	
0	1	-2	-2	0	1	4	0	1	
0	2	-2	-1	1	1	1	-	-	
0	3	-2	6	13	-9	-4	1	1	
0	4	-2	4	15	-8	-2	-	-	
0	5	-2	10	62	-25	-4	2	1	
0	-1	-2	2	1	1	4	1	-1	

$D < 0$

$k = 2$									$k = -2$								
m	n	k	a	b	c	d	x	y	m	n	k	a	b	c	d	x	y
0	-2	2	1	3	-1	-1	-	-	0	-2	-2	1	3	1	1	-	-
0	-3	2	6	14	-9	-4	2	1	0	-3	-2	6	14	9	4	2	-1
0	-4	2	4	17	-8	-2	-	-	0	-4	-2	4	17	8	2	-	-
0	-5	2	10	63	-25	-4	3	1	0	-5	-2	10	63	25	4	3	-1
1	0	2	1	4	2	0	1	0	1	0	-2	1	4	-2	0	1	0
1	-1	2	1	1	0	-2	1	2	1	-1	-2	1	1	0	2	-1	2
1	-2	2	1	2	0	-1	1	1	1	-2	-2	1	2	0	1	1	-1
1	-3	2	1	7	2	0	1	0	1	-3	-2	1	7	-2	0	1	0
1	-4	2	1	8	2	0	5	4	1	-4	-2	1	8	-2	0	5	-4
1	-5	2	1	9	2	0	1	0	1	-5	-2	1	9	-2	0	1	0
2	0	2	1	1	1	-1	-	-	2	0	-2	1	1	-1	1	-	-
2	-3	2	2	2	-1	-2	1	1	2	-3	-2	2	2	1	2	1	-1
3	0	2	9	4	6	13	1	-1	3	0	-2	9	4	-6	-13	1	1
3	-4	2	17	40	26	11	1	1	3	-4	-2	17	40	-26	-11	1	-1
4	0	2	8	2	4	15	-	-	4	0	-2	-8	-2	4	15	-	-
4	-1	2	2	1	1	0	-1	1	4	-1	-2	2	1	-1	0	1	1
4	-2	2	2	1	0	-2	-	-	4	-2	-2	2	1	0	2	-	-
4	-3	2	2	2	1	0	2	3	4	-3	-2	2	2	-1	0	2	-3
4	-4	2	2	2	0	-1	-	-	4	-4	-2	2	2	0	1	-	-
4	-5	2	2	3	1	0	1	1	4	-5	-2	2	3	-1	0	1	-1
5	0	2	25	4	10	62	-1	2	5	0	-2	-25	-4	10	62	1	2
5	-2	2	3	2	2	2	-1	1	5	-2	-2	3	2	-2	-2	1	1

$k = 3$									$k = -3$								
m	n	k	a	b	c	d	x	y	m	n	k	a	b	c	d	x	y
-5	0	3	25	9	-15	-42	1	2	-5	0	-3	25	9	15	42	-1	2
-5	1	3	7	5	-6	-9	5	6	-5	1	-3	7	5	6	9	-5	6
-5	2	3	7	1	3	18	-	-	-5	2	-3	-7	-1	3	18	-	-
-5	3	3	2	3	-3	-3	1	1	-5	3	-3	2	3	3	3	1	-1
-5	4	3	7	11	-9	-6	-9	14	-5	4	-3	7	11	9	6	9	14
-5	5	3	20	11	15	27	4	3	-5	5	-3	20	11	-15	-27	4	-3
-4	1	3	3	0	1	13	-	-	-4	1	-3	-3	0	1	13	-	-
-4	2	3	34	47	-40	-29	1	1	-4	2	-3	34	47	40	29	1	-1
-4	4	3	36	75	-52	-25	-9	13	-4	4	-3	36	75	52	25	9	13
-4	5	3	101	244	-157	-65	4	-5	-4	5	-3	101	244	157	65	4	5
-3	0	3	1	1	-1	-4	-	-	-3	0	-3	1	1	1	4	-	-
-3	1	3	0	1	-1	-3	1	1	-3	1	-3	0	1	1	3	1	-1
-3	4	3	9	5	7	12	-3	4	-3	4	-3	-9	-5	7	12	3	4
-2	-1	3	5	2	-3	-9	2	3	-2	-1	-3	5	2	3	9	2	-3

$D < 0$									
$k = 3$					$k = -3$				
m	n	k	a	b	c	d	x	y	
-2	0	3	4	9	-6	-3	1	1	
-2	1	3	5	16	-9	-3	0	1	
-2	3	3	-1	-6	3	1	2	-3	
-2	4	3	0	3	-2	-1	7	3	
-1	-2	3	-3	-9	5	2	3	2	
-1	-1	3	1	2	-1	-2	1	2	
-1	1	3	0	3	-1	-1	3	1	
-1	2	3	1	-1	1	2	-1	2	
-1	5	3	1	-1	2	1	-1	1	
0	-5	3	15	42	-25	-9	2	1	
0	-3	3	1	4	-1	-1	-	-	
0	-2	3	6	3	-4	-9	1	1	
0	0	3	0	1	0	-3	-	-	
0	1	3	3	0	1	9	0	1	
0	3	3	1	-2	1	1	-	-	
0	4	3	12	21	16	9	1	-1	
1	-5	3	6	9	-7	-5	6	5	
1	-4	3	1	13	3	0	1	0	
1	-3	3	1	3	0	-1	1	1	
1	-2	3	9	3	-5	-16	9	16	
1	-1	3	1	1	0	-3	1	3	
1	0	3	1	9	3	0	1	0	
1	1	3	0	3	1	-1	3	-1	
1	2	3	1	7	3	0	1	0	
2	-5	3	3	18	7	1	-	-	
2	-4	3	40	29	-34	-47	1	1	
2	-1	3	1	2	1	-1	-2	1	
2	1	3	3	0	1	7	0	1	
3	-5	3	3	3	-2	-3	1	1	
3	-2	3	3	1	-1	-6	3	-2	
3	0	3	1	1	1	-2	-	-	
4	-5	3	9	6	-7	-11	14	-9	
4	-4	3	52	25	-36	-75	13	-9	
4	-3	3	7	12	9	5	-4	3	
4	-2	3	2	1	0	-3	3	7	
4	0	3	16	9	12	21	1	-1	
5	-5	3	15	27	20	11	3	4	
5	-4	3	157	65	-101	-244	5	-4	
5	-1	3	2	1	1	-1	-1	1	
-2	0	-3	4	9	6	3	1	-1	
-2	1	-3	5	16	9	3	0	1	
-2	3	-3	1	6	3	1	2	3	
-2	4	-3	0	3	2	1	7	-3	
-1	-2	-3	3	9	5	2	3	-2	
-1	-1	-3	1	2	1	2	1	-2	
-1	1	-3	0	3	1	1	3	-1	
-1	2	-3	-1	1	1	2	1	2	
-1	5	-3	-1	1	2	1	1	1	
0	-5	-3	15	42	25	9	2	-1	
0	-3	-3	1	4	1	1	-	-	
0	-2	-3	6	3	4	9	1	-1	
0	0	-3	0	1	0	3	-	-	
0	1	-3	-3	0	1	9	0	1	
0	3	-3	-1	2	1	1	-	-	
0	4	-3	12	21	-16	-9	1	1	
1	-5	-3	6	9	7	5	6	-5	
1	-4	-3	1	13	-3	0	1	0	
1	-3	-3	1	3	0	1	1	-1	
1	-2	-3	9	3	5	16	-9	16	
1	-1	-3	1	1	0	3	1	-3	
1	0	-3	1	9	-3	0	1	0	
1	1	-3	0	3	-1	1	3	1	
1	2	-3	1	7	-3	0	1	0	
2	-5	-3	3	18	-7	-1	-	-	
2	-4	-3	40	29	34	47	1	-1	
2	-1	-3	1	2	-1	1	2	1	
2	1	-3	3	0	-1	-7	0	1	
3	-5	-3	3	3	2	3	1	-1	
3	-2	-3	3	1	1	6	3	2	
3	0	-3	1	1	-1	2	-	-	
4	-5	-3	9	6	7	11	14	9	
4	-4	-3	52	25	36	75	13	9	
4	-3	-3	7	12	-9	-5	4	3	
4	-2	-3	2	1	0	3	3	-7	
4	0	-3	16	9	-12	-21	1	1	
5	-5	-3	15	27	-20	-11	3	-4	
5	-4	-3	157	65	101	244	5	4	
5	-1	-3	2	1	-1	1	1	1	

$D < 0$									
$k = 4$					$k = -4$				
m	n	k	a	b	c	d	x	y	
-5	1	4	4	0	1	21	0	1	
-5	2	4	1	2	-2	-3	1	1	
-5	5	4	-15	-7	10	22	2	-3	
-4	0	4	-1	-1	1	5	-	-	
-4	1	4	0	1	-1	-4	0	1	
-4	4	4	0	2	-2	-2	-	-	
-3	-1	4	-5	-1	2	14	1	2	
-3	0	4	9	16	-12	-7	1	1	
-3	1	4	2	3	-2	-2	3	2	
-3	3	4	3	11	-6	-2	1	-2	
-3	5	4	1	-1	2	2	2	1	
-2	-1	4	2	5	-3	-2	1	1	
-2	1	4	0	2	-1	-2	2	1	
-2	2	4	1	-1	1	3	-	-	
-2	4	4	0	-4	2	1	-	-	
-1	-3	4	2	14	-5	-1	-	-	
-1	-2	4	3	2	-2	-5	1	1	
-1	1	4	0	4	-1	-1	4	1	
0	-4	4	1	5	-1	-1	-	-	
0	-3	4	12	7	-9	-16	1	1	
0	0	4	0	2	0	-2	-	-	
0	1	4	4	0	1	16	0	1	
0	4	4	1	-3	1	1	-	-	
0	5	4	20	31	25	16	1	-1	
1	-5	4	1	21	4	0	1	0	
1	-4	4	1	4	0	-1	1	1	
1	-3	4	2	2	-1	-3	2	3	
1	-2	4	1	2	0	-2	1	2	
1	-1	4	1	1	0	-4	1	4	
1	0	4	1	16	4	0	1	0	
1	1	4	0	4	1	-1	0	1	
1	2	4	1	-2	0	2	1	-2	
1	3	4	1	13	4	0	1	0	
2	-5	4	2	3	-1	-2	1	1	
2	-2	4	1	3	1	-1	-	-	
2	1	4	0	2	1	-2	2	-1	
3	-3	4	6	2	-3	-11	2	-1	
3	1	4	4	0	1	13	0	1	
-5	1	-4	-4	0	1	21	0	1	
-5	2	-4	1	2	2	3	1	-1	
-5	5	-4	15	7	10	22	2	3	
-4	0	-4	1	1	1	5	-	-	
-4	1	-4	0	1	1	4	0	1	
-4	4	-4	0	2	2	2	-	-	
-3	-1	-4	5	1	2	14	1	-2	
-3	0	-4	9	16	12	7	1	-1	
-3	1	-4	2	3	2	2	3	-2	
-3	3	-4	3	11	6	2	1	2	
-3	5	-4	-1	1	2	2	2	-1	
-2	-1	-4	2	5	3	2	1	-1	
-2	1	-4	0	2	1	2	2	-1	
-2	2	-4	-1	1	1	3	-	-	
-2	4	-4	0	4	2	1	-	-	
-1	-3	-4	2	14	5	1	-	-	
-1	-2	-4	3	2	2	5	1	-1	
-1	1	-4	0	4	1	1	4	-1	
0	-4	-4	1	5	1	1	-	-	
0	-3	-4	12	7	9	16	1	-1	
0	0	-4	0	2	0	2	-	-	
0	1	-4	-4	0	1	16	0	1	
0	4	-4	-1	3	1	1	-	-	
0	5	-4	20	31	-25	-16	1	1	
1	-5	-4	1	21	-4	0	1	0	
1	-4	-4	1	4	0	1	1	-1	
1	-3	-4	2	2	1	3	2	-3	
1	-2	-4	1	2	0	2	1	-2	
1	-1	-4	1	1	0	4	1	-4	
1	0	-4	1	16	-4	0	1	0	
1	1	-4	0	4	1	1	0	1	
1	2	-4	1	-2	0	-2	1	2	
1	3	-4	1	13	-4	0	1	0	
2	-5	-4	2	3	1	2	1	-1	
2	-2	-4	1	3	-1	1	-	-	
2	1	-4	0	2	-1	2	2	1	
3	-3	-4	6	2	3	11	2	1	
3	1	-4	-4	0	1	13	0	1	

$D < 0$									
$k = 4$					$k = -4$				
m	n	k	a	b	c	d	x	y	
4	-4	4	2	2	0	-2	-	-	
4	-2	4	2	1	0	-4	-	-	
4	0	4	1	1	1	-3	-	-	
5	-5	4	10	22	-15	-7	3	-2	
5	-3	4	2	2	1	-1	1	2	
5	0	4	25	16	20	31	1	-1	
$k = 5$					$k = -5$				
m	n	k	a	b	c	d	x	y	
-5	-1	5	10	5	-7	-15	2	3	
-5	0	5	1	1	-1	-6	-	-	
-5	1	5	0	1	-1	-5	1	1	
-5	4	5	5	1	3	10	1	-2	
-5	5	5	1	4	-3	-2	-	-	
-4	0	5	16	25	-20	-13	1	1	
-4	1	5	5	0	1	29	0	1	
-4	3	5	11	2	5	25	22	13	
-4	4	5	36	11	20	65	-	-	
-3	-2	5	-19	-9	13	28	3	4	
-3	-1	5	2	1	-1	-7	1	1	
-3	1	5	5	0	1	28	0	1	
-3	2	5	1	-1	1	4	-	-	
-3	3	5	6	1	3	13	2	1	
-3	4	5	0	5	-2	-1	9	4	
-2	-3	5	13	28	-19	-9	4	3	
-2	-2	5	2	3	-2	-3	1	1	
-2	-1	5	1	2	-1	-3	2	1	
-2	1	5	1	8	-3	-1	0	1	
-2	2	5	2	17	-6	-1	1	-3	
-2	4	5	0	-5	2	1	3	1	
-1	-5	5	7	15	-10	-5	3	2	
-1	-4	5	7	3	5	10	-7	10	
-1	-3	5	7	4	-5	-10	7	10	
-1	-2	5	1	3	-1	-2	1	2	
-1	1	5	0	5	-1	-1	5	1	
-1	3	5	1	-2	1	2	1	-2	
-1	4	5	7	3	5	10	-7	10	
0	-5	5	1	6	-1	-1	-	-	
m	n	k	a	b	c	d	x	y	
4	-4	-4	2	2	0	2	-	-	
4	-2	-4	2	1	0	4	-	-	
4	0	-4	1	1	-1	3	-	-	
5	-5	-4	10	22	15	7	3	2	
5	-3	-4	2	2	-1	1	1	-2	
5	0	-4	25	16	-20	-31	1	1	
m	n	k	a	b	c	d	x	y	
-5	-1	-5	10	5	7	15	2	-3	
-5	0	-5	1	1	1	6	-	-	
-5	1	-5	0	1	1	5	1	-1	
-5	4	-5	5	1	-3	-10	1	2	
-5	5	-5	1	4	3	2	-	-	
-4	0	-5	16	25	20	13	1	-1	
-4	1	-5	-5	0	1	29	0	1	
-4	3	-5	-11	-2	5	25	22	-13	
-4	4	-5	-36	-11	20	65	-	-	
-3	-2	-5	19	9	13	28	3	-4	
-3	-1	-5	2	1	1	7	1	-1	
-3	1	-5	-5	0	1	28	0	1	
-3	2	-5	-1	1	1	4	-	-	
-3	3	-5	-6	-1	3	13	2	-1	
-3	4	-5	0	5	2	1	9	-4	
-2	-3	-5	13	28	19	9	4	-3	
-2	-2	-5	2	3	2	3	1	-1	
-2	-1	-5	1	2	1	3	2	-1	
-2	1	-5	1	8	3	1	0	1	
-2	2	-5	2	17	6	1	1	3	
-2	4	-5	0	5	2	1	3	-1	
-1	-5	-5	7	15	10	5	3	-2	
-1	-4	-5	-7	-3	5	10	7	10	
-1	-3	-5	7	4	5	10	-7	10	
-1	-2	-5	1	3	1	2	1	-2	
-1	1	-5	0	5	1	1	5	-1	
-1	3	-5	-1	2	1	2	1	2	
-1	4	-5	7	3	-5	-10	7	10	
0	-5	-5	1	6	1	1	-	-	

$D < 0$									
$k = 5$					$k = -5$				
m	n	k	a	b	c	d	x	y	
0	-4	5	-20	-13	16	25	1	1	
0	0	5	0	1	0	-5	-	-	
0	1	5	5	0	1	25	0	1	
0	5	5	-1	4	1	1	-	-	
1	-5	5	1	5	0	-1	1	0	
1	-4	5	1	29	5	0	1	0	
1	-3	5	1	28	5	0	1	0	
1	-2	5	-3	-1	1	8	1	0	
1	-1	5	1	1	0	-5	1	5	
1	0	5	1	25	5	0	1	0	
1	1	5	0	5	1	-1	5	-1	
1	2	5	7	1	3	16	7	-16	
1	3	5	2	-1	1	3	2	-3	
1	4	5	1	21	5	0	1	0	
1	5	5	1	-5	0	1	1	0	
2	-3	5	1	4	1	-1	-	-	
2	-2	5	6	1	-2	-17	3	-1	
2	1	5	3	16	7	1	0	1	
2	3	5	11	26	17	7	2	-1	
3	-4	5	5	25	11	2	13	22	
3	-3	5	3	13	6	1	1	2	
3	-1	5	1	2	1	-2	2	-1	
3	1	5	1	3	2	-1	3	-2	
3	2	5	17	7	11	26	1	-2	
4	-5	5	23	10	-15	-35	2	-1	
4	-4	5	20	65	36	11	5	9	
4	-3	5	2	1	0	-5	4	9	
4	-2	5	2	1	0	-5	1	3	
4	-1	5	5	10	7	3	10	-7	
4	1	5	5	0	1	21	0	1	
5	-5	5	2	3	1	-1	-	-	
5	0	5	1	1	1	-4	-	-	
5	1	5	0	1	1	-5	1	-1	
0	-4	-5	20	13	16	25	1	-1	
0	0	-5	0	1	0	5	-	-	
0	1	-5	-5	0	1	25	0	1	
0	5	-5	1	-4	1	1	-	-	
1	-5	-5	1	5	0	1	1	0	
1	-4	-5	1	29	-5	0	1	0	
1	-3	-5	1	28	-5	0	1	0	
1	-2	-5	3	1	1	8	1	0	
1	-1	-5	1	1	0	5	-1	5	
1	0	-5	1	25	-5	0	1	0	
1	1	-5	0	-5	1	-1	5	1	
1	2	-5	-7	-1	3	16	7	16	
1	3	-5	-2	1	1	3	2	3	
1	4	-5	1	21	-5	0	1	0	
1	5	-5	1	-5	0	-1	1	0	
2	-3	-5	1	4	-1	1	-	-	
2	-2	-5	6	1	2	17	3	1	
2	1	-5	3	16	-7	-1	0	1	
2	3	-5	11	26	-17	-7	2	1	
3	-4	-5	5	25	-11	-2	-13	22	
3	-3	-5	3	13	-6	-1	1	-2	
3	-1	-5	1	2	-1	2	2	1	
3	1	-5	1	3	-2	1	3	2	
3	2	-5	17	7	-11	-26	1	2	
4	-5	-5	23	10	15	35	2	1	
4	-4	-5	20	65	-36	-11	5	-9	
4	-3	-5	2	1	0	5	4	-9	
4	-2	-5	2	1	0	5	1	-3	
4	-1	-5	5	10	-7	-3	10	7	
4	1	-5	-5	0	1	21	0	1	
5	-5	-5	2	3	-1	1	-	-	
5	0	-5	1	1	-1	4	-	-	
5	1	-5	0	-1	1	-5	1	1	

APPENDIX 3

$$k = 0$$

$D > 0$															
m	n	a	b	c	d	x	y	m	n	a	b	c	d	x	y
1	1	0	0	1	-1	1	0	4	4	0	0	-2	2	-	-
1	2	1	-2	0	0	1	0	4	6	2	-3	0	0	-	-
1	3	1	-3	0	0	1	0	4	8	2	-4	0	0	-	-
1	4	1	-4	0	0	1	0	4	10	2	-5	0	0	-	-
1	5	1	-5	0	0	1	0	4	12	1	-3	-3	1	-	-
1	6	1	-6	0	0	1	0	4	14	2	-7	0	0	-	-
1	7	1	-7	0	0	1	0	4	16	0	0	-4	1	-	-
1	8	1	-8	0	0	1	0	5	5	1	-1	-2	2	-	-
1	9	1	-9	0	0	1	0	6	9	0	0	-3	2	-	-
1	10	1	-10	0	0	1	0	6	12	2	-4	-2	1	-	-
1	11	1	-11	0	0	1	0	8	8	2	-2	-2	2	-	-
1	12	1	-12	0	0	1	0	8	16	0	0	-4	2	-	-
1	13	1	-13	0	0	1	0	9	9	0	0	-3	3	-	-
1	14	1	-14	0	0	1	0	9	12	3	-4	0	0	-	-
1	15	1	-15	0	0	1	0	9	15	3	-5	0	0	-	-
1	16	1	-16	0	0	1	0	10	10	1	-1	-3	3	-	-
2	2	1	-1	-1	1	-	-	10	15	2	-3	-3	2	-	-
2	4	0	0	-2	1	-	-	12	16	0	0	-4	3	-	-
3	6	1	-2	-2	1	-	-	13	13	2	-2	-3	3	-	-
3	9	0	0	-3	1	-	-	16	16	0	0	-4	4	-	-

$D = 0$															
m	n	a	b	c	d	x	y	m	n	a	b	c	d	x	y
0	0	0	0	0	0	-	-	0	9	0	1	3	0	-	-
0	1	0	1	1	0	0	1	0	16	0	1	4	0	-	-
0	4	0	1	2	0	-	-								

$D < 0$															
m	n	a	b	c	d	x	y	m	n	a	b	c	d	x	y
-16	1	0	0	1	16	0	1	-15	10	3	2	4	6	-	-
-16	4	0	0	2	8	-	-	-15	15	1	1	4	4	-	-
-16	8	4	2	4	8	-	-	-15	16	15	16	16	15	1	1
-16	16	3	3	5	5	-	-	-14	1	0	0	1	14	0	1
-15	1	0	0	1	15	0	1	-14	2	7	1	3	21	-	-
-15	4	15	4	8	30	1	2	-14	4	0	0	2	7	-	-
-15	6	5	2	4	10	-	-	-14	7	2	1	3	6	-	-
-15	9	0	0	3	5	-	-	-14	9	56	36	45	70	4	5

