



# The Adjustable Hyperbolic Paraboloid Framework of the Integer Numbers Supporting All Polynomials

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November 30, 2020

# The adjustable hyperbolic paraboloid framework of the integer numbers supporting all polynomials

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**Received:** 27 November 2020    **Revised:** DD Month YYYY    **Accepted:** DD Month YYYY

**Abstract:** This study shows initial details of the adjustable hyperbolic paraboloid framework formed by all integer numbers. This framework can generate all polynomials from zero degree to an infinite degree.

**Keywords:** Polynomials, integer sequences, hyperbolas, parabolas, quadratics, multiplication table, prime numbers, the sieve of primes, elementary number theory.

**2010 Mathematics Subject Classification:** 11N35, 11N36, 11A05, 11A51.

## 1 Introduction

Please, as a reference consult the *Conventions, notations, and abbreviations* study [2].

This study shows initial details of the adjustable hyperbolic paraboloid framework formed by all integer numbers. This framework can generate all polynomials from zero degree to an infinite degree.

This framework has its formation origin on the multiplication table.

As we have seen before, the multiplication table is a hyperboctys, which is a paraboctys with a hyperbolic structure. We also saw that the multiplication table has all the quadratic composite generators.

This way, from the multiplication table hyperboctys, we will generate an infinite amount of other hyperboctys by adding a unit and also generate another infinite amount of other hyperboctys by subtracting a unit. Since all these new hyperboctys have the multiplication table as their origin, then they are all hyperbolic structures.

We then stack them all sequentially to form our 3D framework. The sequential stacking of these hyperboctys with quadratic sequences forms new perpendicular paraboctys that, according to our initial reasoning, generate the paraboctys with parabolic structures.

The framework formed occupies a three-dimensional Cartesian space with infinitely many surfaces hyperbolic paraboloid.

Each crossing of the Cartesian grid has an integer determined by the hyperboctys stacked from the multiplication table. This framework behaves as if it were an enormous molecule where the integers would be the infinitely many atoms of this molecule.

Whatever the surface, the plane, or paraboctys, of the framework we analyzed, there will always appear a mosaic determined by integer numbers. Each integer has its position very well defined concerning all other positions of the other integers.

## 2 The ParaHyperCube $a = 0$

This 3D framework can take many shapes. We may see this framework as a sequential superposition of very well defined parallel surfaces. Each parallel surface set, besides being malleable, has its mosaic that is also malleable.

In this study, it looks like a cube because we are working with planes, or tables, or paraboctys of 11 by 11 elements. But since the planes are infinite, the cube view is just a didactic way to understand the framework. With better computers and software, we can expand this study by changing the lattice-grid, for example, from Cartesian to isometric, stacking conical or pyramidal surfaces, etc.

This 3D framework contains all the integers equally repeatedly infinitely many times so, from the multiplication table, we can find all the polynomial integer sequences of any degree, starting with degree 0.

As we will see below, because of the hyperbolic paraboloid construction of this cube-shaped framework we will name it ParaHyperCube  $a = 0$ .

The reason we put  $a = 0$  to the name is because of the geometric planes of construction of the framework. We make them with paraboctys containing vertical sequences with 1st-degree polynomials. So the 2nd-degree coefficient  $a = 0$ . Of course, with better software and computers we can construct countless other frameworks using  $a > 0$  and that is why the title of this study has the word "adjustable".

In the Cartesian space of 3 dimensions, we will stack each hyperboctys of the form  $PS[-x + z, z, x + z] = \text{Multiplication Table} + z$  sequentially for  $-\infty < z < \infty$  along the Z-axis.

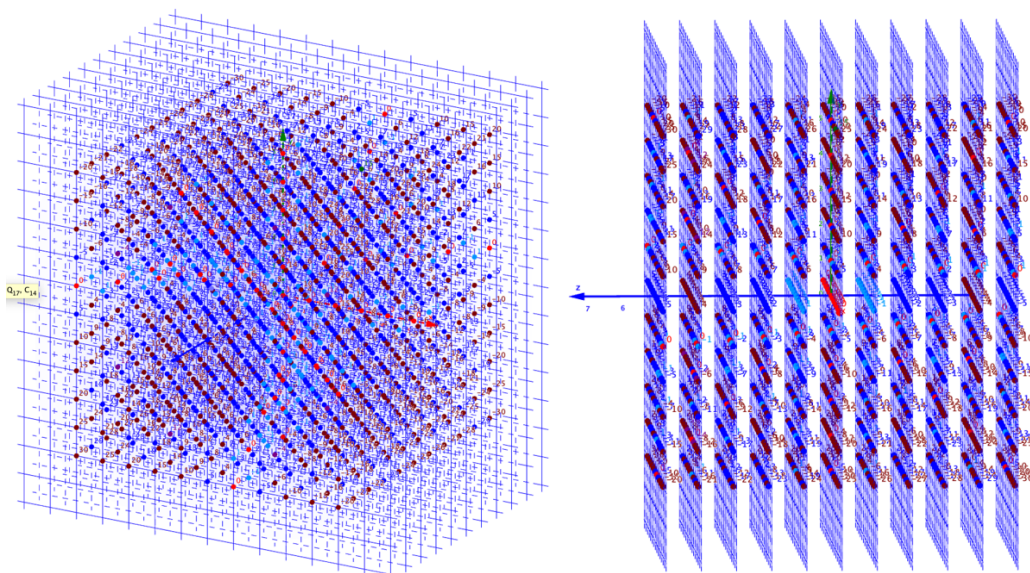


Figure 1. Two perspectives of the planes perpendicular to the Z-axis. In all this study, we are limiting in 11 planes  $-5 \leq z \leq 5$ . <https://photos.app.goo.gl/ctTEBjjxKXF9GMHH8>

Particularly, for  $z = 0$  we will have the FMT Full Multiplication Table, which is the hyperboctys  $PS[-x, 0, x]$ :

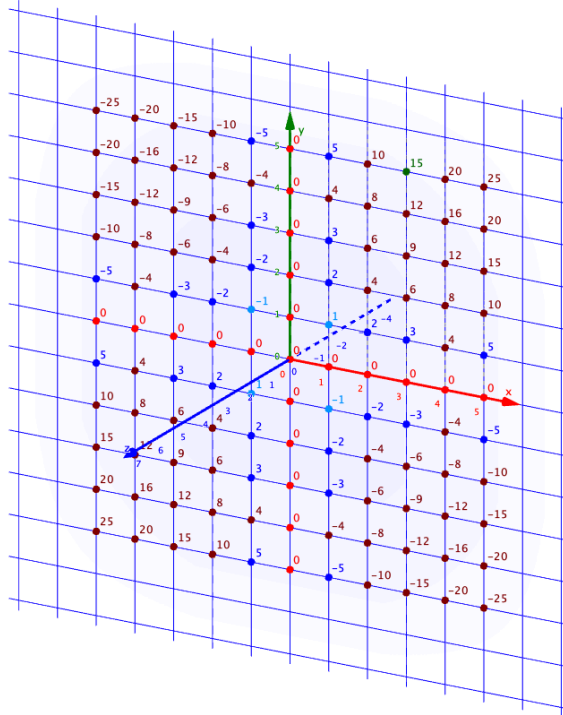


Figure 1. The Cartesian plane at  $z = 0$  with the  $FMT = PS[-x, 0, x]$  in perspective.

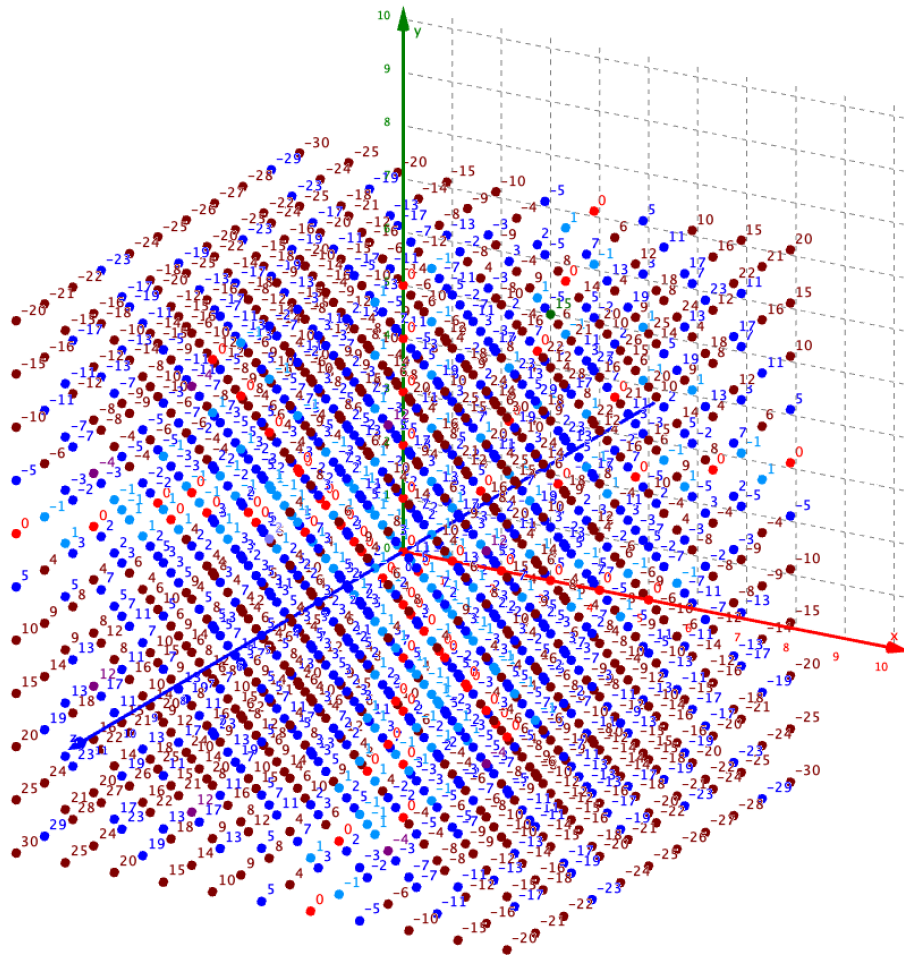


Figure 1. A clearer view of the 3D framework with the  $11^3 = 1331$  dots. Each dot has its Integer value. The center of the cube is a dot Zero in the position  $(x, y, z) = (0,0,0)$ . We highlight as a reference to the squared XY plane in  $z = 0$  that has the FMT.

<https://photos.app.goo.gl/e5ei6K2A4t2MiRr66>

In this study, we will begin by analyzing only the 33 planes closest to the origin  $(x, y, z) = (0,0,0)$  and parallel to the XY, YZ, and ZX planes:

- 11 planes perpendicular to the Z-axis
- 11 planes perpendicular to the X-axis
- 11 planes perpendicular to the Y-axis

With this study, it will be possible to show that there are always infinitely many prime number pairs such that  $|Prime1 \pm Prime2| = Even$  for all Even numbers.

Next, we will study:

- inclined planes of  $45^\circ$  perpendicular to the XY-axis
- inclined planes of  $135^\circ$  perpendicular to the XY-axis
- inclined planes of  $45^\circ$  perpendicular to the YZ-axis
- inclined planes of  $135^\circ$  perpendicular to the YZ-axis
- inclined planes of  $45^\circ$  perpendicular to the ZX-axis
- inclined planes of  $135^\circ$  perpendicular to the ZX-axis

### 3 The 11 planes perpendicular to the Z-axis

All these planes are perpendicular to the Z-axis outward from the cube. In the following tables, the direction of the Y-axis is up, and the direction of the X-axis is to the right.

These planes are the paraboctys of the form

$$PS[Y[-1], Y[0], Y[1]] = PS[-x + z, z, x + z]$$

Note that for any plane perpendicular to the Z-axis:

$$Y[1] + Y[-1] = 2z = \text{constant}$$

$$Y[1] - Y[-1] = 2x$$

When rotating the  $PS[-x + z, z, x + z]$  CCW  $90^\circ$  results in the

$$PS[X[-1], X[0], X[1]] = PS[y + z, z, -y + z]$$

Then, the direction of the Y-axis is to the left, and the direction of the X-axis is up.

Finally, for any plane perpendicular to the Z-axis:

$$X[1] + X[-1] = 2z = \text{constant}$$

$$X[1] - X[-1] = -2y$$

### 3.1 $z = -5$

Plane perpendicular to the Z axis, where $z = -5$																						
	PS[	0	x^2+	-1	x+	-5	,	0	x^2+	0	x+	-5	,	0	x^2+	1	x+	-5	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	
Y-axis -->	10	-105	-95	-85	-75	-65	-55	-45	-35	-25	-15	-5	5	15	25	35	45	55	65	75	85	95
	9	-95	-86	-77	-68	-59	-50	-41	-32	-23	-14	-5	4	13	22	31	40	49	58	67	76	85
	8	-85	-77	-69	-61	-53	-45	-37	-29	-21	-13	-5	3	11	19	27	35	43	51	59	67	75
	7	-75	-68	-61	-54	-47	-40	-33	-26	-19	-12	-5	2	9	16	23	30	37	44	51	58	65
	6	-65	-59	-53	-47	-41	-35	-29	-23	-17	-11	-5	1	7	13	19	25	31	37	43	49	55
	5	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45
	4	-45	-41	-37	-33	-29	-25	-21	-17	-13	-9	-5	-1	3	7	11	15	19	23	27	31	35
	3	-35	-32	-29	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25
	2	-25	-23	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15
Y[1]	1	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5
Y[0]	0	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
Y[-1]	-1	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15
	-2	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19	-21	-23	-25
	-3	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26	-29	-32	-35
	-4	35	31	27	23	19	15	11	7	3	-1	-5	-9	-13	-17	-21	-25	-29	-33	-37	-41	-45
	-5	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55
	-6	55	49	43	37	31	25	19	13	7	1	-5	-11	-17	-23	-29	-35	-41	-47	-53	-59	-65
	-7	65	58	51	44	37	30	23	16	9	2	-5	-12	-19	-26	-33	-40	-47	-54	-61	-68	-75
	-8	75	67	59	51	43	35	27	19	11	3	-5	-13	-21	-29	-37	-45	-53	-61	-69	-77	-85
	-9	85	76	67	58	49	40	31	22	13	4	-5	-14	-23	-32	-41	-50	-59	-68	-77	-86	-95
	-10	95	85	75	65	55	45	35	25	15	5	-5	-15	-25	-35	-45	-55	-65	-75	-85	-95	-105

Figure 1. The plane  $PS[-x - 5, -5, x - 5]$ . See the 9 main variations on the link:

[https://1drv.ms/u/s!Arslv070x3WjjYhcuaP8sDT\\_kr1riw](https://1drv.ms/u/s!Arslv070x3WjjYhcuaP8sDT_kr1riw)

### 3.2 $z = -4$

Plane perpendicular to the Z axis, where $z = -4$																						
	PS[	0	x^2+	-1	x+	-4	,	0	x^2+	0	x+	-4	,	0	x^2+	1	x+	-4	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	
Y-axis -->	10	-104	-94	-84	-74	-64	-54	-44	-34	-24	-14	-4	6	16	26	36	46	56	66	76	86	96
	9	-94	-85	-76	-67	-58	-49	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86
	8	-84	-76	-68	-60	-52	-44	-36	-28	-20	-12	-4	4	12	20	28	36	44	52	60	68	76
	7	-74	-67	-60	-53	-46	-39	-32	-25	-18	-11	-4	3	10	17	24	31	38	45	52	59	66
	6	-64	-58	-52	-46	-40	-34	-28	-22	-16	-10	-4	2	8	14	20	26	32	38	44	50	56
	5	-54	-49	-44	-39	-34	-29	-24	-19	-14	-9	-4	1	6	11	16	21	26	31	36	41	46
	4	-44	-40	-36	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32	36
	3	-34	-31	-28	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26
	2	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16
Y[1]	1	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Y[0]	0	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
Y[-1]	-1	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
	-2	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24
	-3	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31	-34
	-4	36	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	-36	-40	-44
	-5	46	41	36	31	26	21	16	11	6	1	-4	-9	-14	-19	-24	-29	-34	-39	-44	-49	-54
	-6	56	50	44	38	32	26	20	14	8	2	-4	-10	-16	-22	-28	-34	-40	-46	-52	-58	-64
	-7	66	59	52	45	38	31	24	17	10	3	-4	-11	-18	-25	-32	-39	-46	-53	-60	-67	-74
	-8	76	68	60	52	44	36	28	20	12	4	-4	-12	-20	-28	-36	-44	-52	-60	-68	-76	-84
	-9	86	77	68	59	50	41	32	23	14	5	-4	-13	-22	-31	-40	-49	-58	-67	-76	-85	-94
	-10	96	86	76	66	56	46	36	26	16	6	-4	-14	-24	-34	-44	-54	-64	-74	-84	-94	-104

Figure 1. The plane  $PS[-x - 4, -4, x - 4]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhaGxAF2WTJwJlsoQ>



### 3.3 $z = -3$

Plane perpendicular to the Z axis, where $z = -3$																						
	PS[	0	x^2+	-1	x+	-3	,	0	x^2+	0	x+	-3	,	0	x^2+	1	x+	-3	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
Y-axis -->	10	-103	-93	-83	-73	-63	-53	-43	-33	-23	-13	-3	7	17	27	37	47	57	67	77	87	97
	9	-93	-84	-75	-66	-57	-48	-39	-30	-21	-12	-3	6	15	24	33	42	51	60	69	78	87
	8	-83	-75	-67	-59	-51	-43	-35	-27	-19	-11	-3	5	13	21	29	37	45	53	61	69	77
	7	-73	-66	-59	-52	-45	-38	-31	-24	-17	-10	-3	4	11	18	25	32	39	46	53	60	67
	6	-63	-57	-51	-45	-39	-33	-27	-21	-15	-9	-3	3	9	15	21	27	33	39	45	51	57
	5	-53	-48	-43	-38	-33	-28	-23	-18	-13	-8	-3	2	7	12	17	22	27	32	37	42	47
	4	-43	-39	-35	-31	-27	-23	-19	-15	-11	-7	-3	1	5	9	13	17	21	25	29	33	37
	3	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27
	2	-23	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17
Y[1]	1	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7
Y[0]	0	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
Y[-1]	-1	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
	-2	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19	-21	-23
	-3	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27	-30	-33
	-4	37	33	29	25	21	17	13	9	5	1	-3	-7	-11	-15	-19	-23	-27	-31	-35	-39	-43
	-5	47	42	37	32	27	22	17	12	7	2	-3	-8	-13	-18	-23	-28	-33	-38	-43	-48	-53
	-6	57	51	45	39	33	27	21	15	9	3	-3	-9	-15	-21	-27	-33	-39	-45	-51	-57	-63
	-7	67	60	53	46	39	32	25	18	11	4	-3	-10	-17	-24	-31	-38	-45	-52	-59	-66	-73
	-8	77	69	61	53	45	37	29	21	13	5	-3	-11	-19	-27	-35	-43	-51	-59	-67	-75	-83
	-9	87	78	69	60	51	42	33	24	15	6	-3	-12	-21	-30	-39	-48	-57	-66	-75	-84	-93
	-10	97	87	77	67	57	47	37	27	17	7	-3	-13	-23	-33	-43	-53	-63	-73	-83	-93	-103

Figure 1. The plane  $PS[-x - 3, -3, x - 3]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhZGxAF2WTJwJlsoQ>

### 3.4 $z = -2$

Plane perpendicular to the Z axis, where $z = -2$																						
	PS[	0	x^2+	-1	x+	-2	,	0	x^2+	0	x+	-2	,	0	x^2+	1	x+	-2	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	
Y-axis -->	10	-102	-92	-82	-72	-62	-52	-42	-32	-22	-12	-2	8	18	28	38	48	58	68	78	88	98
	9	-92	-83	-74	-65	-56	-47	-38	-29	-20	-11	-2	7	16	25	34	43	52	61	70	79	88
	8	-82	-74	-66	-58	-50	-42	-34	-26	-18	-10	-2	6	14	22	30	38	46	54	62	70	78
	7	-72	-65	-58	-51	-44	-37	-30	-23	-16	-9	-2	5	12	19	26	33	40	47	54	61	68
	6	-62	-56	-50	-44	-38	-32	-26	-20	-14	-8	-2	4	10	16	22	28	34	40	46	52	58
	5	-52	-47	-42	-37	-32	-27	-22	-17	-12	-7	-2	3	8	13	18	23	28	33	38	43	48
	4	-42	-38	-34	-30	-26	-22	-18	-14	-10	-6	-2	2	6	10	14	18	22	26	30	34	38
	3	-32	-29	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25	28
	2	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18
Y[1]	1	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8
Y[0]	0	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
Y[-1]	-1	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
	-2	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22
	-3	28	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26	-29	-32
	-4	38	34	30	26	22	18	14	10	6	2	-2	-6	-10	-14	-18	-22	-26	-30	-34	-38	-42
	-5	48	43	38	33	28	23	18	13	8	3	-2	-7	-12	-17	-22	-27	-32	-37	-42	-47	-52
	-6	58	52	46	40	34	28	22	16	10	4	-2	-8	-14	-20	-26	-32	-38	-44	-50	-56	-62
	-7	68	61	54	47	40	33	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72
	-8	78	70	62	54	46	38	30	22	14	6	-2	-10	-18	-26	-34	-42	-50	-58	-66	-74	-82
	-9	88	79	70	61	52	43	34	25	16	7	-2	-11	-20	-29	-38	-47	-56	-65	-74	-83	-92
	-10	98	88	78	68	58	48	38	28	18	8	-2	-12	-22	-32	-42	-52	-62	-72	-82	-92	-102

Figure 1. The plane  $PS[-x - 2, -2, x - 2]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhXGxAF2WTJwJlsoQ>

### 3.5 $z = -1$

Plane perpendicular to the Z axis, where $z = -1$																						
	PS[	0	x^2+	-1	x+	-1	,	0	x^2+	0	x+	-1	,	0	x^2+	1	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
Y-axis -->	10	-101	-91	-81	-71	-61	-51	-41	-31	-21	-11	-1	9	19	29	39	49	59	69	79	89	99
	9	-91	-82	-73	-64	-55	-46	-37	-28	-19	-10	-1	8	17	26	35	44	53	62	71	80	89
	8	-81	-73	-65	-57	-49	-41	-33	-25	-17	-9	-1	7	15	23	31	39	47	55	63	71	79
	7	-71	-64	-57	-50	-43	-36	-29	-22	-15	-8	-1	6	13	20	27	34	41	48	55	62	69
	6	-61	-55	-49	-43	-37	-31	-25	-19	-13	-7	-1	5	11	17	23	29	35	41	47	53	59
	5	-51	-46	-41	-36	-31	-26	-21	-16	-11	-6	-1	4	9	14	19	24	29	34	39	44	49
	4	-41	-37	-33	-29	-25	-21	-17	-13	-9	-5	-1	3	7	11	15	19	23	27	31	35	39
	3	-31	-28	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26	29
	2	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19
Y[1]	1	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9
Y[0]	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Y[-1]	-1	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
	-2	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19	-21
	-3	29	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31
	-4	39	35	31	27	23	19	15	11	7	3	-1	-5	-9	-13	-17	-21	-25	-29	-33	-37	-41
	-5	49	44	39	34	29	24	19	14	9	4	-1	-6	-11	-16	-21	-26	-31	-36	-41	-46	-51
	-6	59	53	47	41	35	29	23	17	11	5	-1	-7	-13	-19	-25	-31	-37	-43	-49	-55	-61
	-7	69	62	55	48	41	34	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71
	-8	79	71	63	55	47	39	31	23	15	7	-1	-9	-17	-25	-33	-41	-49	-57	-65	-73	-81
	-9	89	80	71	62	53	44	35	26	17	8	-1	-10	-19	-28	-37	-46	-55	-64	-73	-82	-91
	-10	99	89	79	69	59	49	39	29	19	9	-1	-11	-21	-31	-41	-51	-61	-71	-81	-91	-101

Figure 1. The plane  $PS[-x - 1, -1, x - 1]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhYGxAF2WTJwJlsoQ>

### 3.6 $z = 0$

Plane perpendicular to the Z axis, where $z = 0$																						
	PS[	0	x^2+	-1	x+	0	,	0	x^2+	0	x+	0	,	0	x^2+	1	x+	0	]			
<b>X-axis --&gt;</b>	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
<b>Classif.</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
<b>y_ip</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
<b>f</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
<b>a</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>b</b>	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
<b>c</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Y-axis --&gt;</b>	10	-100	-90	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	100
	9	-90	-81	-72	-63	-54	-45	-36	-27	-18	-9	0	9	18	27	36	45	54	63	72	81	90
	8	-80	-72	-64	-56	-48	-40	-32	-24	-16	-8	0	8	16	24	32	40	48	56	64	72	80
	7	-70	-63	-56	-49	-42	-35	-28	-21	-14	-7	0	7	14	21	28	35	42	49	56	63	70
	6	-60	-54	-48	-42	-36	-30	-24	-18	-12	-6	0	6	12	18	24	30	36	42	48	54	60
	5	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50
	4	-40	-36	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32	36	40
	3	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30
	2	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20
<b>Y[1]</b>	1	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
<b>Y[0]</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Y[-1]</b>	-1	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-2	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20
	-3	30	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27	-30
	-4	40	36	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	-36	-40
	-5	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50
	-6	60	54	48	42	36	30	24	18	12	6	0	-6	-12	-18	-24	-30	-36	-42	-48	-54	-60
	-7	70	63	56	49	42	35	28	21	14	7	0	-7	-14	-21	-28	-35	-42	-49	-56	-63	-70
	-8	80	72	64	56	48	40	32	24	16	8	0	-8	-16	-24	-32	-40	-48	-56	-64	-72	-80
	-9	90	81	72	63	54	45	36	27	18	9	0	-9	-18	-27	-36	-45	-54	-63	-72	-81	-90
	-10	100	90	80	70	60	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60	-70	-80	-90	-100

Figure 1. The plane  $PS[-x, 0, x]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhbGxAF2WTJwJlsoQ>

### 3.7 $z = 1$

Plane perpendicular to the Z axis, where $z = 1$																						
	PS[	0	x^2+	-1	x+	1	,	0	x^2+	0	x+	1	,	0	x^2+	1	x+	1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Y-axis -->	10	-99	-89	-79	-69	-59	-49	-39	-29	-19	-9	1	11	21	31	41	51	61	71	81	91	101
	9	-89	-80	-71	-62	-53	-44	-35	-26	-17	-8	1	10	19	28	37	46	55	64	73	82	91
	8	-79	-71	-63	-55	-47	-39	-31	-23	-15	-7	1	9	17	25	33	41	49	57	65	73	81
	7	-69	-62	-55	-48	-41	-34	-27	-20	-13	-6	1	8	15	22	29	36	43	50	57	64	71
	6	-59	-53	-47	-41	-35	-29	-23	-17	-11	-5	1	7	13	19	25	31	37	43	49	55	61
	5	-49	-44	-39	-34	-29	-24	-19	-14	-9	-4	1	6	11	16	21	26	31	36	41	46	51
	4	-39	-35	-31	-27	-23	-19	-15	-11	-7	-3	1	5	9	13	17	21	25	29	33	37	41
	3	-29	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25	28	31
	2	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19	21
Y[1]	1	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11
Y[0]	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Y[-1]	-1	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
	-2	21	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19
	-3	31	28	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26	-29
	-4	41	37	33	29	25	21	17	13	9	5	1	-3	-7	-11	-15	-19	-23	-27	-31	-35	-39
	-5	51	46	41	36	31	26	21	16	11	6	1	-4	-9	-14	-19	-24	-29	-34	-39	-44	-49
	-6	61	55	49	43	37	31	25	19	13	7	1	-5	-11	-17	-23	-29	-35	-41	-47	-53	-59
	-7	71	64	57	50	43	36	29	22	15	8	1	-6	-13	-20	-27	-34	-41	-48	-55	-62	-69
	-8	81	73	65	57	49	41	33	25	17	9	1	-7	-15	-23	-31	-39	-47	-55	-63	-71	-79
	-9	91	82	73	64	55	46	37	28	19	10	1	-8	-17	-26	-35	-44	-53	-62	-71	-80	-89
	-10	101	91	81	71	61	51	41	31	21	11	1	-9	-19	-29	-39	-49	-59	-69	-79	-89	-99

Figure 1. The plane  $PS[-x + 1, 1, x + 1]$ . See the 9 main variations on the link:  
<https://1drv.ms/u/s!Arslv070x3WjjYhdGxAF2WTJwJlsoQ>

### 3.8 $z = 2$

Plane perpendicular to the Z axis, where $z = 2$																						
	PS[	0	x^2+	-1	x+	2	,	0	x^2+	0	x+	2	,	0	x^2+	1	x+	2	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Y-axis -->	10	-98	-88	-78	-68	-58	-48	-38	-28	-18	-8	2	12	22	32	42	52	62	72	82	92	102
	9	-88	-79	-70	-61	-52	-43	-34	-25	-16	-7	2	11	20	29	38	47	56	65	74	83	92
	8	-78	-70	-62	-54	-46	-38	-30	-22	-14	-6	2	10	18	26	34	42	50	58	66	74	82
	7	-68	-61	-54	-47	-40	-33	-26	-19	-12	-5	2	9	16	23	30	37	44	51	58	65	72
	6	-58	-52	-46	-40	-34	-28	-22	-16	-10	-4	2	8	14	20	26	32	38	44	50	56	62
	5	-48	-43	-38	-33	-28	-23	-18	-13	-8	-3	2	7	12	17	22	27	32	37	42	47	52
	4	-38	-34	-30	-26	-22	-18	-14	-10	-6	-2	2	6	10	14	18	22	26	30	34	38	42
	3	-28	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26	29	32
	2	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20	22
Y[1]	1	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12
Y[0]	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Y[-1]	-1	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8
	-2	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18
	-3	32	29	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28
	-4	42	38	34	30	26	22	18	14	10	6	2	-2	-6	-10	-14	-18	-22	-26	-30	-34	-38
	-5	52	47	42	37	32	27	22	17	12	7	2	-3	-8	-13	-18	-23	-28	-33	-38	-43	-48
	-6	62	56	50	44	38	32	26	20	14	8	2	-4	-10	-16	-22	-28	-34	-40	-46	-52	-58
	-7	72	65	58	51	44	37	30	23	16	9	2	-5	-12	-19	-26	-33	-40	-47	-54	-61	-68
	-8	82	74	66	58	50	42	34	26	18	10	2	-6	-14	-22	-30	-38	-46	-54	-62	-70	-78
	-9	92	83	74	65	56	47	38	29	20	11	2	-7	-16	-25	-34	-43	-52	-61	-70	-79	-88
	-10	102	92	82	72	62	52	42	32	22	12	2	-8	-18	-28	-38	-48	-58	-68	-78	-88	-98

Figure 1. The plane  $PS[-x + 2, 2, x + 2]$ . See the 9 main variations on the link:  
<https://1drv.ms/u/s!Arslv070x3WjjYheGxAF2WTJwJlsoQ>

### 3.9 $z = 3$

Plane perpendicular to the Z axis, where $z = 3$																						
	PS[	0	x^2+	-1	x+	3	,	0	x^2+	0	x+	3	,	0	x^2+	1	x+	3	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Y-axis -->	10	-97	-87	-77	-67	-57	-47	-37	-27	-17	-7	3	13	23	33	43	53	63	73	83	93	103
	9	-87	-78	-69	-60	-51	-42	-33	-24	-15	-6	3	12	21	30	39	48	57	66	75	84	93
	8	-77	-69	-61	-53	-45	-37	-29	-21	-13	-5	3	11	19	27	35	43	51	59	67	75	83
	7	-67	-60	-53	-46	-39	-32	-25	-18	-11	-4	3	10	17	24	31	38	45	52	59	66	73
	6	-57	-51	-45	-39	-33	-27	-21	-15	-9	-3	3	9	15	21	27	33	39	45	51	57	63
	5	-47	-42	-37	-32	-27	-22	-17	-12	-7	-2	3	8	13	18	23	28	33	38	43	48	53
	4	-37	-33	-29	-25	-21	-17	-13	-9	-5	-1	3	7	11	15	19	23	27	31	35	39	43
	3	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	33
	2	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19	21	23
Y[1]	1	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Y[0]	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Y[-1]	-1	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
	-2	23	21	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17
	-3	33	30	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27
	-4	43	39	35	31	27	23	19	15	11	7	3	-1	-5	-9	-13	-17	-21	-25	-29	-33	-37
	-5	53	48	43	38	33	28	23	18	13	8	3	-2	-7	-12	-17	-22	-27	-32	-37	-42	-47
	-6	63	57	51	45	39	33	27	21	15	9	3	-3	-9	-15	-21	-27	-33	-39	-45	-51	-57
	-7	73	66	59	52	45	38	31	24	17	10	3	-4	-11	-18	-25	-32	-39	-46	-53	-60	-67
	-8	83	75	67	59	51	43	35	27	19	11	3	-5	-13	-21	-29	-37	-45	-53	-61	-69	-77
	-9	93	84	75	66	57	48	39	30	21	12	3	-6	-15	-24	-33	-42	-51	-60	-69	-78	-87
	-10	103	93	83	73	63	53	43	33	23	13	3	-7	-17	-27	-37	-47	-57	-67	-77	-87	-97

Figure 1. The plane  $PS[-x + 3, 3, x + 3]$ . See the 9 main variations on the link:  
<https://1drv.ms/u/s!Arslv070x3WjjYhfGxAF2WTJwJlsoQ>

### 3.10 $z = 4$

Plane perpendicular to the Z axis, where $z = 4$																						
	PS[	0	x^2+	-1	x+	4	,	0	x^2+	0	x+	4	,	0	x^2+	1	x+	4	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Y-axis -->	10	-96	-86	-76	-66	-56	-46	-36	-26	-16	-6	4	14	24	34	44	54	64	74	84	94	104
	9	-86	-77	-68	-59	-50	-41	-32	-23	-14	-5	4	13	22	31	40	49	58	67	76	85	94
	8	-76	-68	-60	-52	-44	-36	-28	-20	-12	-4	4	12	20	28	36	44	52	60	68	76	84
	7	-66	-59	-52	-45	-38	-31	-24	-17	-10	-3	4	11	18	25	32	39	46	53	60	67	74
	6	-56	-50	-44	-38	-32	-26	-20	-14	-8	-2	4	10	16	22	28	34	40	46	52	58	64
	5	-46	-41	-36	-31	-26	-21	-16	-11	-6	-1	4	9	14	19	24	29	34	39	44	49	54
	4	-36	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32	36	40	44
	3	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25	28	31	34
	2	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20	22	24
Y[1]	1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Y[0]	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Y[-1]	-1	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
	-2	24	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16
	-3	34	31	28	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26
	-4	44	40	36	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	-36
	-5	54	49	44	39	34	29	24	19	14	9	4	-1	-6	-11	-16	-21	-26	-31	-36	-41	-46
	-6	64	58	52	46	40	34	28	22	16	10	4	-2	-8	-14	-20	-26	-32	-38	-44	-50	-56
	-7	74	67	60	53	46	39	32	25	18	11	4	-3	-10	-17	-24	-31	-38	-45	-52	-59	-66
	-8	84	76	68	60	52	44	36	28	20	12	4	-4	-12	-20	-28	-36	-44	-52	-60	-68	-76
	-9	94	85	76	67	58	49	40	31	22	13	4	-5	-14	-23	-32	-41	-50	-59	-68	-77	-86
	-10	104	94	84	74	64	54	44	34	24	14	4	-6	-16	-26	-36	-46	-56	-66	-76	-86	-96

Figure 1. The plane  $PS[-x + 4, 4, x + 4]$ . See the 9 main variations on the link:  
<https://1drv.ms/u/s!Arslv070x3WjjYhgGxAF2WTJwJlsoQ>



### 3.11 $z = 5$

Plane perpendicular to the Z axis, where $z = 5$																						
	PS[	0	x^2+	-1	x+	5	,	0	x^2+	0	x+	5	,	0	x^2+	1	x+	5	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
c	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
Y-axis -->	10	-95	-85	-75	-65	-55	-45	-35	-25	-15	-5	5	15	25	35	45	55	65	75	85	95	105
	9	-85	-76	-67	-58	-49	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95
	8	-75	-67	-59	-51	-43	-35	-27	-19	-11	-3	5	13	21	29	37	45	53	61	69	77	85
	7	-65	-58	-51	-44	-37	-30	-23	-16	-9	-2	5	12	19	26	33	40	47	54	61	68	75
	6	-55	-49	-43	-37	-31	-25	-19	-13	-7	-1	5	11	17	23	29	35	41	47	53	59	65
	5	-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
	4	-35	-31	-27	-23	-19	-15	-11	-7	-3	1	5	9	13	17	21	25	29	33	37	41	45
	3	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26	29	32	35
	2	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19	21	23	25
Y[1]	1	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Y[0]	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Y[-1]	-1	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5
	-2	25	23	21	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15
	-3	35	32	29	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25
	-4	45	41	37	33	29	25	21	17	13	9	5	1	-3	-7	-11	-15	-19	-23	-27	-31	-35
	-5	55	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
	-6	65	59	53	47	41	35	29	23	17	11	5	-1	-7	-13	-19	-25	-31	-37	-43	-49	-55
	-7	75	68	61	54	47	40	33	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65
	-8	85	77	69	61	53	45	37	29	21	13	5	-3	-11	-19	-27	-35	-43	-51	-59	-67	-75
	-9	95	86	77	68	59	50	41	32	23	14	5	-4	-13	-22	-31	-40	-49	-58	-67	-76	-85
	-10	105	95	85	75	65	55	45	35	25	15	5	-5	-15	-25	-35	-45	-55	-65	-75	-85	-95

Figure 1. The plane  $PS[-x + 5, x + 5]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhhGxAF2WTJwJlsoQ>

## 4 The 11 planes perpendicular to the X-axis

All these planes are perpendicular to the X-axis outward from the cube. In the following tables, the direction of the Y-axis is up, and the direction of the Z-axis is to the left.

These planes are the paraboctys of the form

$$PS[Y[-1], Y[0], Y[1]] = PS[-z - x, -z, -z + x]$$

The negative sign in the 3 terms “z” is because of the opposite direction of the Z-axis.

Note that for any plane perpendicular to the X-axis:

$$Y[1] + Y[-1] = -2z$$

$$Y[1] - Y[-1] = 2x = \textit{constant}$$

When rotating the  $PS[-z - x, -z, -z + x]$  CCW 90° results in the

$$PS[Z[-1], Z[0], Z[1]] = PS[-xy + 1, -xy, -xy - 1]$$

Then, the direction of the Y-axis is to the left, and the direction of the Z-axis is down. The negative sign in the 3 terms “xy” is because of the opposite direction of the Y-axis.

Finally, for any plane perpendicular to the X-axis:

$$Z[1] + Z[-1] = -2xy$$

$$|Z[1] - Z[-1]| = 2 = \textit{constant}$$

$$|Z[2] - Z[-2]| = 4 = \textit{constant}$$

$$|Z[3] - Z[-3]| = 6 = \textit{constant}$$

...

$$|Z[z] - Z[-z]| = 2z = \textit{even}$$

## 4.1 $x = -5$

Plane perpendicular to the X axis, where $x = -5$																						
	PS[	0	z^2+	-1	z+	5	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	-5	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50	-51	-52	-53	-54	-55	-56	-57	-58	-59	-60
	9	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50	-51	-52	-53	-54	-55
	8	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50
	7	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45
	6	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40
	5	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35
	4	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
	3	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25
	2	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
	1	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5
-2	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
-3	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	
-4	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	
-5	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	
-6	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	
-7	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	
-8	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	
-9	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	
-10	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	

Figure 1. The plane  $PS[-z + 5, -z, -z - 5]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhGGxAF2WTJwJlsoQ>

## 4.2 $x = -4$

Plane perpendicular to the X axis, where $x = -4$																						
	PS[	0	z^2+	-1	z+	4	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	-4	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50
	9	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46
	8	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42
	7	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38
	6	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34
	5	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
	4	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26
	3	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22
	2	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
	1	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
Y[1]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[0]	-1	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
Y[-1]	-2	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2
	-3	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
	-4	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
	-5	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
	-6	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
	-7	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
	-8	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22
	-9	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
	-10	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30

Figure 1. The plane  $PS[-z + 4, -z, -z - 4]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhEGxAF2WTJwJlsoQ>

### 4.3 $x = -3$

Plane perpendicular to the X axis, where $x = -3$																						
	PS[	0	z^2+	-1	z+	3	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	-3	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40
	9	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37
	8	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34
	7	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31
	6	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28
	5	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25
	4	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22
	3	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19
	2	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16
	Y[1]	1	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
	-2	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4
	-3	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1
	-4	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
	-5	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5
	-6	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8
	-7	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
	-8	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
	-9	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
	-10	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20

Figure 1. The plane  $PS[-z + 3, -z, -z - 3]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhDGxAF2WTJwJlsoQ>

#### 4.4 $x = -2$

Plane perpendicular to the X axis, where $x = -2$																						
	PS[	0	z^2+	-1	z+	2	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	-2	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
	9	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28
	8	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26
	7	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24
	6	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22
	5	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
	4	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
	3	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16
	2	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
	1	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Y[1]	1	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8
	-2	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
	-3	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4
	-4	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2
	-5	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	-6	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
	-7	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
	-8	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
	-9	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8
	-10	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10

Figure 1. The plane  $PS[-z + 2, -z, -z - 2]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhCXRUxIGyta9ARSA?e=pH8SoR>

### 4.5 $x = -1$

Plane perpendicular to the X axis, where $x = -1$																						
	PS[	0	z^2+	-1	z+	1	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	-1	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
	9	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19
	8	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
	7	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17
	6	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16
	5	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15
	4	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
	3	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
	2	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
	1	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
Y[1]	1	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
	-2	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8
	-3	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
	-4	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
	-5	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5
	-6	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4
	-7	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3
	-8	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2
	-9	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1
	-10	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Figure 1. The plane  $PS[-z + 1, -z, -z - 1]$ . See the 9 main variations on the link:  
<https://1drv.ms/u/s!Arslv070x3WjjYhBGxAF2WTJwJlsoQ>

## 4.6 $x = 0$

Plane perpendicular to the X axis, where $x = 0$																						
	PS[	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	0	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	9	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	8	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	7	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	6	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	5	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	4	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	3	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	2	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	1	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-2	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-3	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-4	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-5	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-6	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-7	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-8	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-9	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
	-10	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10

Figure 1. The plane  $PS[-z, -z, -z]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhFfPY4epZRTot3UA>



### 4.7 $x = 1$

Plane perpendicular to the X axis, where $x = 1$																						
	PS[	0	z^2+	-1	z+	-1	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	1	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	9	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1
	8	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2
	7	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3
	6	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4
	5	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5
	4	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
	3	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
	2	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8
	1	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
Y[1]	1	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
	-2	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
	-3	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
	-4	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
	-5	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15
	-6	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16
	-7	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17
	-8	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
	-9	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19
	-10	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20

Figure 1. The plane  $PS[-z - 1, -z, -z + 1]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhH0tGYCIH7ipFQIQ?e=i16nAI>

## 4.8 $x = 2$

Plane perpendicular to the X axis, where $x = 2$																						
	PS[	0	z^2+	-1	z+	-2	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	2	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
	9	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8
	8	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
	7	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
	6	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
	5	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	4	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2
	3	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4
	2	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
	1	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8
Y[1]	1	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
	-2	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
	-3	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16
	-4	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
	-5	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
	-6	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22
	-7	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24
	-8	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26
	-9	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28
	-10	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30

Figure 1. The plane  $PS[-z - 2, -z, -z + 2]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhIDP8-YA78OVaK5Q?e=auojll>

## 4.9 $x = 3$

Plane perpendicular to the X axis, where $x = 3$																						
	PS[	0	z^2+	-1	z+	-3	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	3	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
	9	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
	8	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
	7	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
	6	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8
	5	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5
	4	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
	3	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1
	2	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4
	1	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
Y[1]	1	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
	-2	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16
	-3	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19
	-4	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22
	-5	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25
	-6	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28
	-7	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31
	-8	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34
	-9	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37
	-10	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40

Figure 1. The plane  $PS[-z - 3, -z, -z + 3]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhJ-ctzDgFTbKRt4A?e=0mZw5d>

### 4.10 $x = 4$

Plane perpendicular to the X axis, where $x = 4$																						
	PS[	0	z^2+	-1	z+	-4	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	4	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
	9	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
	8	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22
	7	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
	6	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
	5	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
	4	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
	3	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
	2	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2
	1	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
Y[1]	1	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
	-2	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
	-3	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22
	-4	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26
	-5	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
	-6	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34
	-7	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38
	-8	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42
	-9	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46
	-10	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50

Figure 1. The plane  $PS[-z - 4, -z, -z + 4]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhKrX5AIDzErIVhuw>

## 4.11 $x = 5$

Plane perpendicular to the X axis, where $x = 5$																						
	PS[	0	z^2+	-1	z+	-5	,	0	z^2+	-1	z+	0	,	0	z^2+	-1	z+	5	]			
<- Z-axis	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
Y-axis -->	10	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
	9	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
	8	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
	7	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
	6	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
	5	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15
	4	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
	3	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5
	2	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	1	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5
Y[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Y[-1]	-1	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15
	-2	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
	-3	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25
	-4	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30
	-5	-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35
	-6	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40
	-7	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45
	-8	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50
	-9	-35	-36	-37	-38	-39	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50	-51	-52	-53	-54	-55
	-10	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49	-50	-51	-52	-53	-54	-55	-56	-57	-58	-59	-60

Figure 1. The plane  $PS[-z - 5, -z, -z + 5]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhLXLvWOGZSvZyew?e=uWzTDD>

## 5 The 11 planes perpendicular to the Y-axis

All these planes are perpendicular to the Y-axis outward from the cube. In the following tables, the direction of the Z-axis is down, and the direction of the X-axis is to the right.

These planes are the paraboctys of the form

$$PS[Z[-1], Z[0], Z[1]] = PS[yx + 1, yx, yx - 1]$$

The positive sign in the 3 terms “ $yx$ ” is because of the positive direction of the X-axis.

Note that for any plane perpendicular to the Y-axis:

$$Z[1] + Z[-1] = 2yx = \textit{even}$$

$$Z[1] - Z[-1] = -2 = \textit{constant}$$

When rotating the  $PS[yx + 1, yx, yx - 1]$  CCW  $90^\circ$  results in the

$$PS[X[-1], X[0], X[1]] = PS[z - y, z, z + y]$$

Then, the direction of the Z-axis is to the right, and the direction of the X-axis is up. The positive sign in the 3 terms “ $z$ ” is because of the positive direction of the Z-axis.

Finally, for any plane perpendicular to the Y-axis:

$$X[1] + X[-1] = 2z = \textit{even}$$

$$X[1] - X[-1] = 2y = \textit{even}$$

## 5.1 $y = -5$

Plane perpendicular to the Y axis, where $y = -5$																						
	PS[	0	x^2+	-5	x+	1	,	0	x^2+	-5	x+	0	,	0	x^2+	-5	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	
<- Z-axis	10	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	
	9	41	36	31	26	21	16	11	6	1	-4	-9	-14	-19	-24	-29	-34	-39	-44	-49	-54	
	8	42	37	32	27	22	17	12	7	2	-3	-8	-13	-18	-23	-28	-33	-38	-43	-48	-53	
	7	43	38	33	28	23	18	13	8	3	-2	-7	-12	-17	-22	-27	-32	-37	-42	-47	-52	
	6	44	39	34	29	24	19	14	9	4	-1	-6	-11	-16	-21	-26	-31	-36	-41	-46	-51	
	5	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55
	4	46	41	36	31	26	21	16	11	6	1	-4	-9	-14	-19	-24	-29	-34	-39	-44	-49	
	3	47	42	37	32	27	22	17	12	7	2	-3	-8	-13	-18	-23	-28	-33	-38	-43	-48	
	2	48	43	38	33	28	23	18	13	8	3	-2	-7	-12	-17	-22	-27	-32	-37	-42	-47	
	1	49	44	39	34	29	24	19	14	9	4	-1	-6	-11	-16	-21	-26	-31	-36	-41	-46	
Z[0]	0	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40		
Z[-1]	-1	51	46	41	36	31	26	21	16	11	6	1	-4	-9	-14	-19	-24	-29	-34	-39		
-2	52	47	42	37	32	27	22	17	12	7	2	-3	-8	-13	-18	-23	-28	-33	-38	-43		
-3	53	48	43	38	33	28	23	18	13	8	3	-2	-7	-12	-17	-22	-27	-32	-37	-42		
-4	54	49	44	39	34	29	24	19	14	9	4	-1	-6	-11	-16	-21	-26	-31	-36	-41		
-5	55	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40		
-6	56	51	46	41	36	31	26	21	16	11	6	1	-4	-9	-14	-19	-24	-29	-34	-39		
-7	57	52	47	42	37	32	27	22	17	12	7	2	-3	-8	-13	-18	-23	-28	-33			
-8	58	53	48	43	38	33	28	23	18	13	8	3	-2	-7	-12	-17	-22	-27	-32			
-9	59	54	49	44	39	34	29	24	19	14	9	4	-1	-6	-11	-16	-21	-26	-31			
-10	60	55	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30			

Figure 1. The plane  $PS[-5x + 1, -5x, -5x - 1]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhQqFJ3eLM4Rarv1w>

## 5.2 $y = -4$

Plane perpendicular to the Y axis, where $y = -4$																						
	PS[	0	x^2+	-4	x+	1	,	0	x^2+	-4	x+	0	,	0	x^2+	-4	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	40	36	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	-36	-40	
<- Z-axis	10	30	26	22	18	14	10	6	2	-2	-6	-10	-14	-18	-22	-26	-30	-34	-38	-42	-46	-50
	9	31	27	23	19	15	11	7	3	-1	-5	-9	-13	-17	-21	-25	-29	-33	-37	-41	-45	-49
	8	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	-36	-40	-44	-48
	7	33	29	25	21	17	13	9	5	1	-3	-7	-11	-15	-19	-23	-27	-31	-35	-39	-43	-47
	6	34	30	26	22	18	14	10	6	2	-2	-6	-10	-14	-18	-22	-26	-30	-34	-38	-42	-46
	5	35	31	27	23	19	15	11	7	3	-1	-5	-9	-13	-17	-21	-25	-29	-33	-37	-41	-45
	4	36	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	-36	-40	-44
	3	37	33	29	25	21	17	13	9	5	1	-3	-7	-11	-15	-19	-23	-27	-31	-35	-39	-43
	2	38	34	30	26	22	18	14	10	6	2	-2	-6	-10	-14	-18	-22	-26	-30	-34	-38	-42
	1	39	35	31	27	23	19	15	11	7	3	-1	-5	-9	-13	-17	-21	-25	-29	-33	-37	-41
Z[0]	0	40	36	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	-36	-40
Z[-1]	-1	41	37	33	29	25	21	17	13	9	5	1	-3	-7	-11	-15	-19	-23	-27	-31	-35	-39
-2	42	38	34	30	26	22	18	14	10	6	2	-2	-6	-10	-14	-18	-22	-26	-30	-34	-38	
-3	43	39	35	31	27	23	19	15	11	7	3	-1	-5	-9	-13	-17	-21	-25	-29	-33	-37	
-4	44	40	36	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	-36	
-5	45	41	37	33	29	25	21	17	13	9	5	1	-3	-7	-11	-15	-19	-23	-27	-31	-35	
-6	46	42	38	34	30	26	22	18	14	10	6	2	-2	-6	-10	-14	-18	-22	-26	-30	-34	
-7	47	43	39	35	31	27	23	19	15	11	7	3	-1	-5	-9	-13	-17	-21	-25	-29	-33	
-8	48	44	40	36	32	28	24	20	16	12	8	4	0	-4	-8	-12	-16	-20	-24	-28	-32	
-9	49	45	41	37	33	29	25	21	17	13	9	5	1	-3	-7	-11	-15	-19	-23	-27	-31	
-10	50	46	42	38	34	30	26	22	18	14	10	6	2	-2	-6	-10	-14	-18	-22	-26	-30	

Figure 1. The plane  $PS[-4x + 1, -4x, -4x - 1]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhP0GgsB5mlt4jmVA>



### 5.3 $y = -3$

Plane perpendicular to the Y axis, where $y = -3$																						
	PS[	0	x^2+	-3	x+	1	,	0	x^2+	-3	x+	0	,	0	x^2+	-3	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	30	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27	-30	
<- Z-axis	10	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31	-34	-37	-40
	9	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27	-30	-33	-36	-39
	8	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26	-29	-32	-35	-38
	7	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31	-34	-37
	6	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27	-30	-33	-36
	5	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26	-29	-32	-35
	4	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28	-31	-34
	3	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27	-30	-33
	2	28	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26	-29	-32
	Z[1]	1	29	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28
Z[0]	0	30	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27	-30
Z[-1]	-1	31	28	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26	-29
	-2	32	29	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25	-28
	-3	33	30	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24	-27
	-4	34	31	28	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23	-26
	-5	35	32	29	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22	-25
	-6	36	33	30	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21	-24
	-7	37	34	31	28	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20	-23
	-8	38	35	32	29	26	23	20	17	14	11	8	5	2	-1	-4	-7	-10	-13	-16	-19	-22
	-9	39	36	33	30	27	24	21	18	15	12	9	6	3	0	-3	-6	-9	-12	-15	-18	-21
	-10	40	37	34	31	28	25	22	19	16	13	10	7	4	1	-2	-5	-8	-11	-14	-17	-20

Figure 1. The plane  $PS[-3x + 1, -3x, -3x - 1]$ . See the 9 main variations on the link:

[https://1drv.ms/u/s!Arslv070x3WjjYhOQ6\\_wA2Jl8ojk3Q](https://1drv.ms/u/s!Arslv070x3WjjYhOQ6_wA2Jl8ojk3Q)

## 5.4 $y = -2$

Plane perpendicular to the Y axis, where $y = -2$																						
	PS[	0	x^2+	-2	x+	1	,	0	x^2+	-2	x+	0	,	0	x^2+	-2	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	
<- Z-axis	10	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30
	9	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19	-21	-23	-25	-27	-29
	8	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28
	7	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19	-21	-23	-25	-27
	6	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26
	5	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19	-21	-23	-25
	4	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24
	3	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19	-21	-23
	2	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22
	Z[1]	1	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19
Z[0]	0	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20
Z[-1]	-1	21	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17	-19
	-2	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16	-18
	-3	23	21	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15	-17
	-4	24	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14	-16
	-5	25	23	21	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13	-15
	-6	26	24	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14
	-7	27	25	23	21	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11	-13
	-8	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12
	-9	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1	-1	-3	-5	-7	-9	-11
	-10	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10

Figure 1. The plane  $PS[-2x + 1, -2x, -2x - 1]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhNJpSQykZkcdZNSq>

## 5.5 $y = -1$

Plane perpendicular to the Y axis, where $y = -1$																						
	PS[	0	x^2+	-1	x+	1	,	0	x^2+	-1	x+	0	,	0	x^2+	-1	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	
<- Z-axis	10	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20
	9	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19
	8	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18
	7	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17
	6	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16
	5	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15
	4	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
	3	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13
	2	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
	1	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
Z[1]	1	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
Z[0]	0	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Z[-1]	-1	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
	-2	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7	-8
	-3	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6	-7
	-4	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5	-6
	-5	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5
	-6	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4
	-7	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3
	-8	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2
	-9	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1
	-10	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Figure 1. The plane  $PS[-x + 1, -x, -x - 1]$ . See the 9 main variations on the link:

[https://1drv.ms/u/s!Arslv070x3WjjYhMA\\_VQqLZvfEU3mA](https://1drv.ms/u/s!Arslv070x3WjjYhMA_VQqLZvfEU3mA)

## 5.6 $y = 0$

Plane perpendicular to the Y axis, where $y=0$																					
	PS[	0	x^2+	0	x+	1	,	0	x^2+	0	x+	0	,	0	x^2+	0	x+	-1	]		
<b>X-axis --&gt;</b>	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
<b>Classif.</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###
<b>y_ip</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###
<b>f</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###
<b>a</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>b</b>	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
<b>c</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>&lt;- Z-axis</b>	10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
	9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
	8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8
	7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7
	6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
	5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
	4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
	3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
	2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
	<b>Z[1]</b>	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
	<b>Z[0]</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Z[-1]</b>	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	-2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	-3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	-4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	-5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	-6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	-7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
	-8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
	-9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
	-10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	

Figure 1. The plane  $PS[1,0,-1]$ . See the 9 main variations on the link:  
<https://1drv.ms/u/s!Arslv070x3WjjYhRxq0DdjHV4aDRBg?e=SZ7cMr>

## 5.7 $y = 1$

Plane perpendicular to the Y axis, where $y=1$																						
	PS[	0	x^2+	1	x+	1	,	0	x^2+	1	x+	0	,	0	x^2+	1	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
<- Z-axis	10	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
	9	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1
	8	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2
	7	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3
	6	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4
	5	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5
	4	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
	3	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7
	2	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8
	Z[1]	1	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8
Z[0]	0	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Z[-1]	-1	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11
	-2	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12
	-3	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13
	-4	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	-5	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	-6	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	-7	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	-8	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	-9	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	-10	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Figure 1. The plane  $PS[x + 1, x, x - 1]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhSzsg8JRMd76HKNA?e=xaZDSl>

## 5.8 $y = 2$

Plane perpendicular to the Y axis, where $y = 2$																						
	PS[	0	x^2+	2	x+	1	,	0	x^2+	2	x+	0	,	0	x^2+	2	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20	
<- Z-axis	10	-30	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10
	9	-29	-27	-25	-23	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11
	8	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12
	7	-27	-25	-23	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13
	6	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14
	5	-25	-23	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15
	4	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16
	3	-23	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17
	2	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18
	Z[1]	1	-21	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17
Z[0]	0	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20
Z[-1]	-1	-19	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19	21
	-2	-18	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20	22
	-3	-17	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19	21	23
	-4	-16	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20	22	24
	-5	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19	21	23	25
	-6	-14	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20	22	24	26
	-7	-13	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19	21	23	25	27
	-8	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28
	-9	-11	-9	-7	-5	-3	-1	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29
	-10	-10	-8	-6	-4	-2	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30

Figure 1. The plane  $PS[2x + 1, 2x - 1]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhTc8XzjK8vFTEUVQ?e=DoFc0p>

## 5.9 $y = 3$

Plane perpendicular to the Y axis, where $y = 3$																						
	PS[	0	x^2+	3	x+	1	,	0	x^2+	3	x+	0	,	0	x^2+	3	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	
<- Z-axis	10	-40	-37	-34	-31	-28	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20
	9	-39	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21
	8	-38	-35	-32	-29	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22
	7	-37	-34	-31	-28	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23
	6	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24
	5	-35	-32	-29	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25
	4	-34	-31	-28	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26
	3	-33	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27
	2	-32	-29	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25	28
	Z[1]	1	-31	-28	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26
Z[0]	0	-30	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30
Z[-1]	-1	-29	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25	28	31
	-2	-28	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26	29	32
	-3	-27	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	33
	-4	-26	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25	28	31	34
	-5	-25	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26	29	32	35
	-6	-24	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	33	36
	-7	-23	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25	28	31	34	37
	-8	-22	-19	-16	-13	-10	-7	-4	-1	2	5	8	11	14	17	20	23	26	29	32	35	38
	-9	-21	-18	-15	-12	-9	-6	-3	0	3	6	9	12	15	18	21	24	27	30	33	36	39
	-10	-20	-17	-14	-11	-8	-5	-2	1	4	7	10	13	16	19	22	25	28	31	34	37	40

Figure 1. The plane  $PS[3x + 1, 3x - 1]$ . See the 9 main variations on the link:

<https://1drv.ms/u/s!Arslv070x3WjjYhUvCZ88fEljH7Ffw?e=XwLpRf>

## 5.10 $y = 4$

Plane perpendicular to the Y axis, where $y = 4$																						
	PS[	0	x^2+	4	x+	1	,	0	x^2+	4	x+	0	,	0	x^2+	4	x+	-1	]			
X-axis -->	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	
Classif.	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
y_ip	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
f	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
c	-40	-36	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32	36	40	
<- Z-axis	10	-50	-46	-42	-38	-34	-30	-26	-22	-18	-14	-10	-6	-2	2	6	10	14	18	22	26	30
	9	-49	-45	-41	-37	-33	-29	-25	-21	-17	-13	-9	-5	-1	3	7	11	15	19	23	27	31
	8	-48	-44	-40	-36	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32
	7	-47	-43	-39	-35	-31	-27	-23	-19	-15	-11	-7	-3	1	5	9	13	17	21	25	29	33
	6	-46	-42	-38	-34	-30	-26	-22	-18	-14	-10	-6	-2	2	6	10	14	18	22	26	30	34
	5	-45	-41	-37	-33	-29	-25	-21	-17	-13	-9	-5	-1	3	7	11	15	19	23	27	31	35
	4	-44	-40	-36	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32	36
	3	-43	-39	-35	-31	-27	-23	-19	-15	-11	-7	-3	1	5	9	13	17	21	25	29	33	37
	2	-42	-38	-34	-30	-26	-22	-18	-14	-10	-6	-2	2	6	10	14	18	22	26	30	34	38
	Z[1]	1	-41	-37	-33	-29	-25	-21	-17	-13	-9	-5	-1	3	7	11	15	19	23	27	31	35
Z[0]	0	-40	-36	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32	36	40
Z[-1]	-1	-39	-35	-31	-27	-23	-19	-15	-11	-7	-3	1	5	9	13	17	21	25	29	33	37	41
	-2	-38	-34	-30	-26	-22	-18	-14	-10	-6	-2	2	6	10	14	18	22	26	30	34	38	42
	-3	-37	-33	-29	-25	-21	-17	-13	-9	-5	-1	3	7	11	15	19	23	27	31	35	39	43
	-4	-36	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32	36	40	44
	-5	-35	-31	-27	-23	-19	-15	-11	-7	-3	1	5	9	13	17	21	25	29	33	37	41	45
	-6	-34	-30	-26	-22	-18	-14	-10	-6	-2	2	6	10	14	18	22	26	30	34	38	42	46
	-7	-33	-29	-25	-21	-17	-13	-9	-5	-1	3	7	11	15	19	23	27	31	35	39	43	47
	-8	-32	-28	-24	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	28	32	36	40	44	48
	-9	-31	-27	-23	-19	-15	-11	-7	-3	1	5	9	13	17	21	25	29	33	37	41	45	49
	-10	-30	-26	-22	-18	-14	-10	-6	-2	2	6	10	14	18	22	26	30	34	38	42	46	50

Figure 1. The plane  $PS[4x + 1, 4x, 4x - 1]$ . See the 9 main variations on the link:

[https://1drv.ms/u/s!Arslv070x3WjjYhVs\\_QfyM-TIMNrfq?e=TCvej](https://1drv.ms/u/s!Arslv070x3WjjYhVs_QfyM-TIMNrfq?e=TCvej)



### 5.11 $y = 5$

Plane perpendicular to the Y axis, where $y = 5$																						
	PS[	0	x^2+	5	x+	1	,	0	x^2+	5	x+	0	,	0	x^2+	5	x+	-1	]			
<b>X-axis --&gt;</b>	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	<b>0</b>	1	2	3	4	5	6	7	8	9	10	
<b>Classif.</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
<b>y_ip</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
<b>f</b>	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	###	
<b>a</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>b</b>	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
<b>c</b>	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	<b>0</b>	5	10	15	20	25	30	35	40	45	50	
<b>&lt;- Z-axis</b>	10	-60	-55	-50	-45	-40	-35	-30	<b>-25</b>	-20	-15	-10	-5	<b>0</b>	5	10	15	20	<b>25</b>	30	35	40
	9	-59	-54	<b>-49</b>	-44	-39	-34	-29	-24	-19	-14	<b>-9</b>	<b>-4</b>	<b>1</b>	6	11	<b>16</b>	21	26	31	<b>36</b>	41
	8	-58	<b>-53</b>	<b>-48</b>	<b>-43</b>	-38	-33	-28	-23	-18	-13	<b>-8</b>	<b>-3</b>	2	7	12	17	22	27	32	37	<b>42</b>
	7	-57	-52	<b>-47</b>	<b>-42</b>	-37	-32	-27	-22	-17	-12	<b>-7</b>	<b>-2</b>	3	8	13	18	23	28	33	38	43
	6	<b>-56</b>	-51	-46	-41	<b>-36</b>	-31	-26	-21	<b>-16</b>	-11	<b>-6</b>	<b>-1</b>	4	9	14	19	24	29	34	39	44
	5	-55	-50	-45	-40	<b>-35</b>	<b>-30</b>	<b>-25</b>	-20	-15	-10	<b>-5</b>	<b>0</b>	5	10	15	20	<b>25</b>	30	35	40	45
	4	-54	<b>-49</b>	-44	-39	-34	-29	<b>-24</b>	-19	-14	<b>-9</b>	<b>-4</b>	<b>1</b>	6	11	<b>16</b>	21	26	31	<b>36</b>	41	46
	3	<b>-53</b>	<b>-48</b>	<b>-43</b>	-38	-33	-28	-23	-18	-13	<b>-8</b>	<b>-3</b>	2	7	12	17	22	27	32	37	<b>42</b>	47
	2	-52	<b>-47</b>	<b>-42</b>	-37	-32	-27	-22	-17	-12	<b>-7</b>	<b>-2</b>	3	8	13	18	23	28	33	38	43	<b>48</b>
	<b>Z[1]</b>	1	-51	-46	-41	<b>-36</b>	-31	-26	-21	<b>-16</b>	-11	<b>-6</b>	<b>-1</b>	4	9	14	19	24	29	34	39	44
<b>Z[0]</b>	<b>0</b>	-50	-45	-40	<b>-35</b>	<b>-30</b>	<b>-25</b>	-20	-15	-10	<b>-5</b>	<b>0</b>	5	10	15	20	<b>25</b>	30	35	40	45	50
<b>Z[-1]</b>	-1	<b>-49</b>	-44	-39	-34	-29	-24	-19	-14	<b>-9</b>	<b>-4</b>	<b>1</b>	6	11	<b>16</b>	21	26	31	<b>36</b>	41	46	51
	-2	<b>-48</b>	<b>-43</b>	-38	-33	-28	-23	-18	-13	<b>-8</b>	<b>-3</b>	2	7	12	17	22	27	32	37	42	47	52
	-3	<b>-47</b>	<b>-42</b>	-37	-32	-27	-22	-17	-12	<b>-7</b>	<b>-2</b>	3	8	13	18	23	28	33	38	43	48	53
	-4	-46	-41	<b>-36</b>	-31	-26	-21	<b>-16</b>	-11	<b>-6</b>	<b>-1</b>	4	9	14	19	24	29	34	39	44	<b>49</b>	54
	-5	-45	-40	<b>-35</b>	<b>-30</b>	<b>-25</b>	-20	-15	-10	<b>-5</b>	<b>0</b>	5	10	15	20	<b>25</b>	30	35	40	45	50	55
	-6	-44	-39	-34	-29	-24	-19	-14	<b>-9</b>	<b>-4</b>	<b>1</b>	6	11	<b>16</b>	21	26	31	<b>36</b>	41	46	51	<b>56</b>
	-7	<b>-43</b>	-38	-33	-28	-23	-18	-13	<b>-8</b>	<b>-3</b>	2	7	12	17	22	27	32	37	42	47	52	57
	-8	<b>-42</b>	-37	-32	-27	-22	-17	-12	<b>-7</b>	<b>-2</b>	3	8	13	18	23	28	33	38	43	48	53	58
	-9	-41	<b>-36</b>	-31	-26	-21	<b>-16</b>	-11	<b>-6</b>	<b>-1</b>	4	9	14	19	24	29	34	39	44	<b>49</b>	54	59
	-10	-40	<b>-35</b>	<b>-30</b>	<b>-25</b>	-20	-15	-10	<b>-5</b>	<b>0</b>	5	10	15	20	<b>25</b>	30	35	40	45	50	55	60

Figure 1. The plane  $PS[5x + 1, 5x - 1]$ . See the 9 main variations on the link:  
<https://1drv.ms/u/s!Arslv070x3WjjYhWANQj-31LIplGg?e=spndvP>

## 6 The lines of the Zeros

As seen in the X and Y planes, all the sequential lines parallel to the Z-axis are always the consecutive integers. This means that whatever the XY coordinate of the line parallel to the Z-axis, always all integers appear on the line and only once.

This way, we can choose only one number to follow his track. All the others will follow the same path in parallel. We will choose the number Zero as a reference.

See below all the lines of zeros that the framework has.

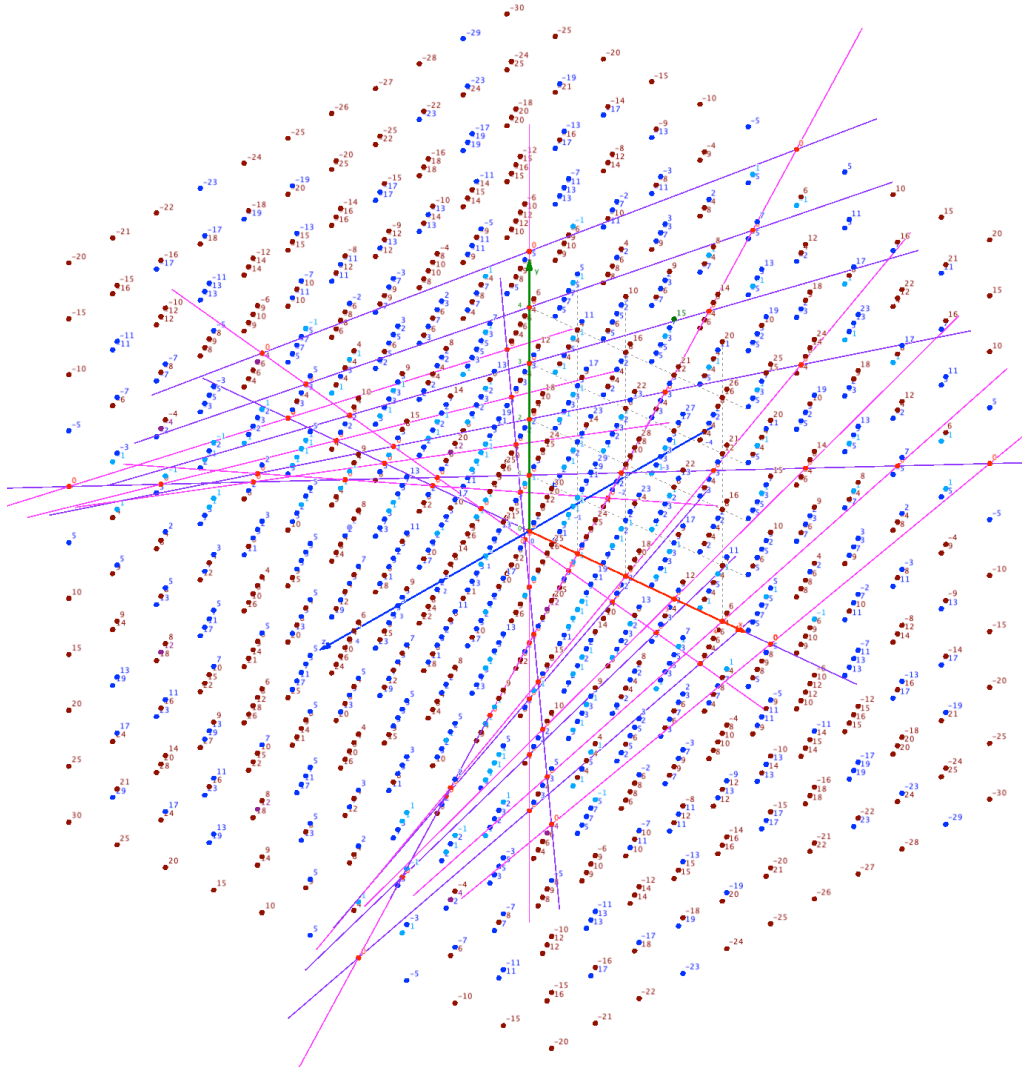


Figure 1. The ParaHyperCube  $a = 0$  with all lines of the Zeros.

<https://photos.app.goo.gl/CEcBAdK6Q3HcGpar5>

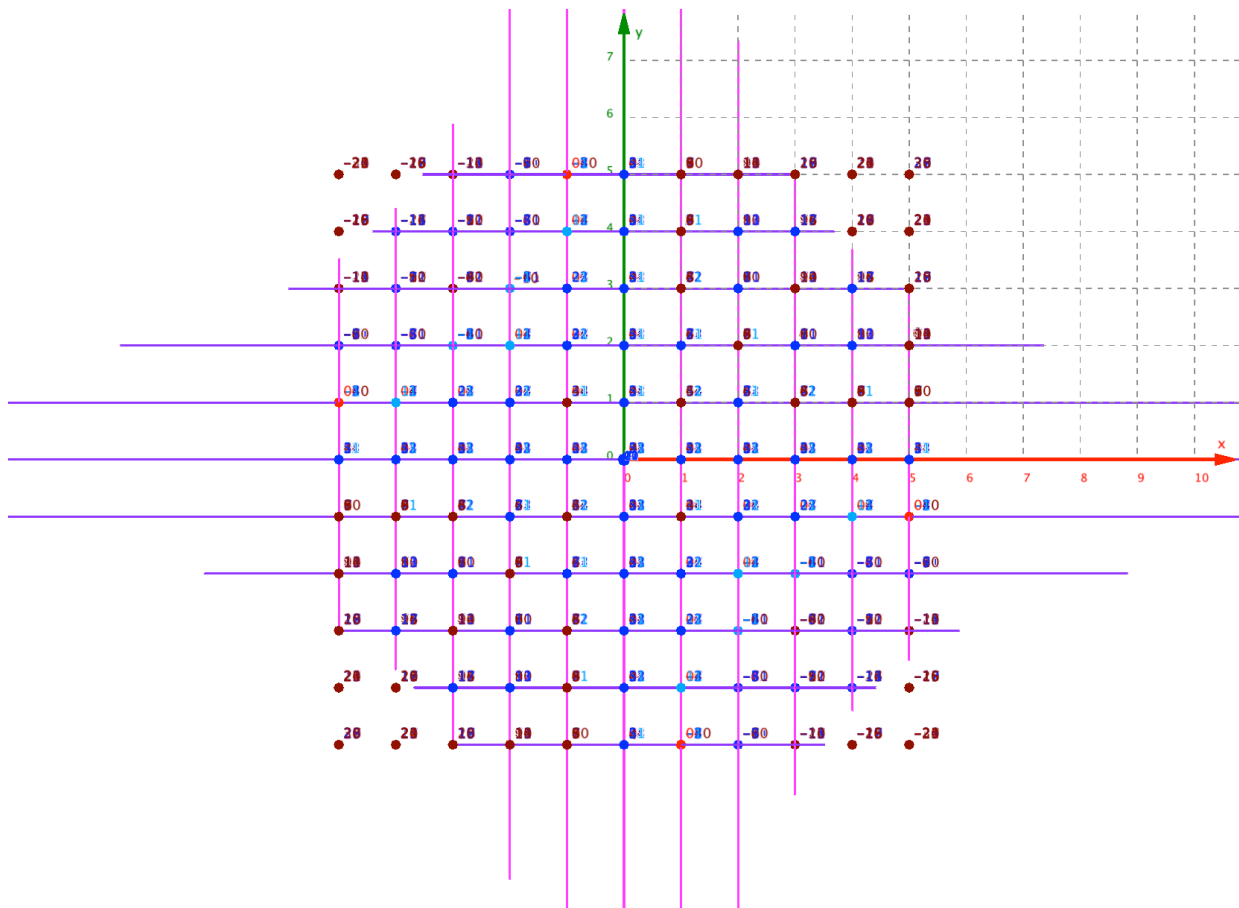


Figure 1. The ParaHyperCube  $a = 0$  with the lines of the Zeros view perpendicular to the XY plane. <https://photos.app.goo.gl/GbHNYpukP2Pg9NT26>

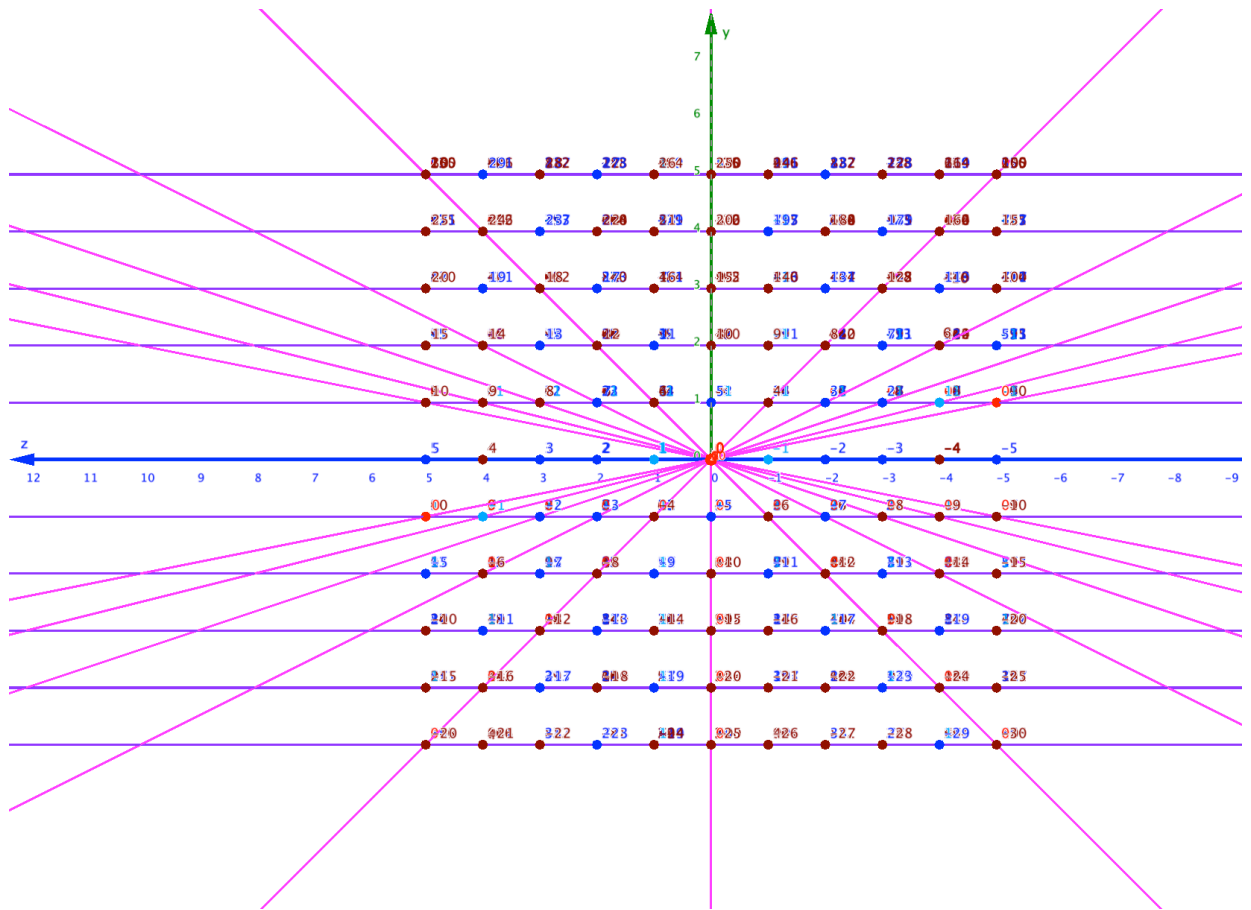


Figure 1. The ParaHyperCube  $a = 0$  with the lines of the Zeros view perpendicular to the YZ plane. <https://photos.app.goo.gl/GbHNYpukP2Pg9NT26>

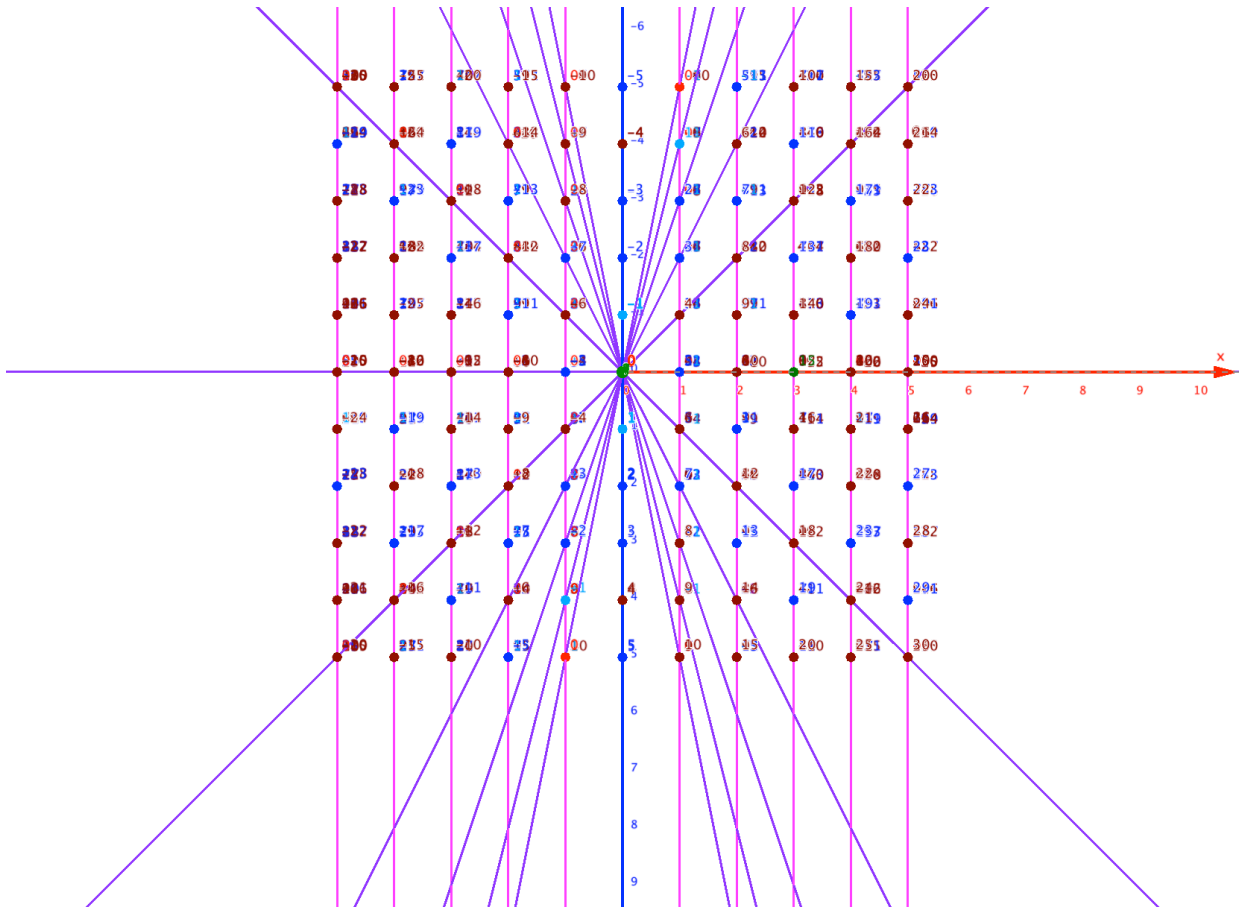


Figure 1. The ParaHyperCube  $\alpha = 0$  with the lines of the Zeros view perpendicular to the ZX plane.

## 7 The adjustable hyperbolic-paraboloid framework of the integer numbers supporting all polynomials

Now, when we join all the lines of Zeros in a single surface, we get a hyperbolic paraboloid surface. This was to be expected because all planes perpendicular to the Z-axis are hyperbolic like the FMT and all planes parallel to the Z-axis are parabolic like our initial prime number sequence reasoning.

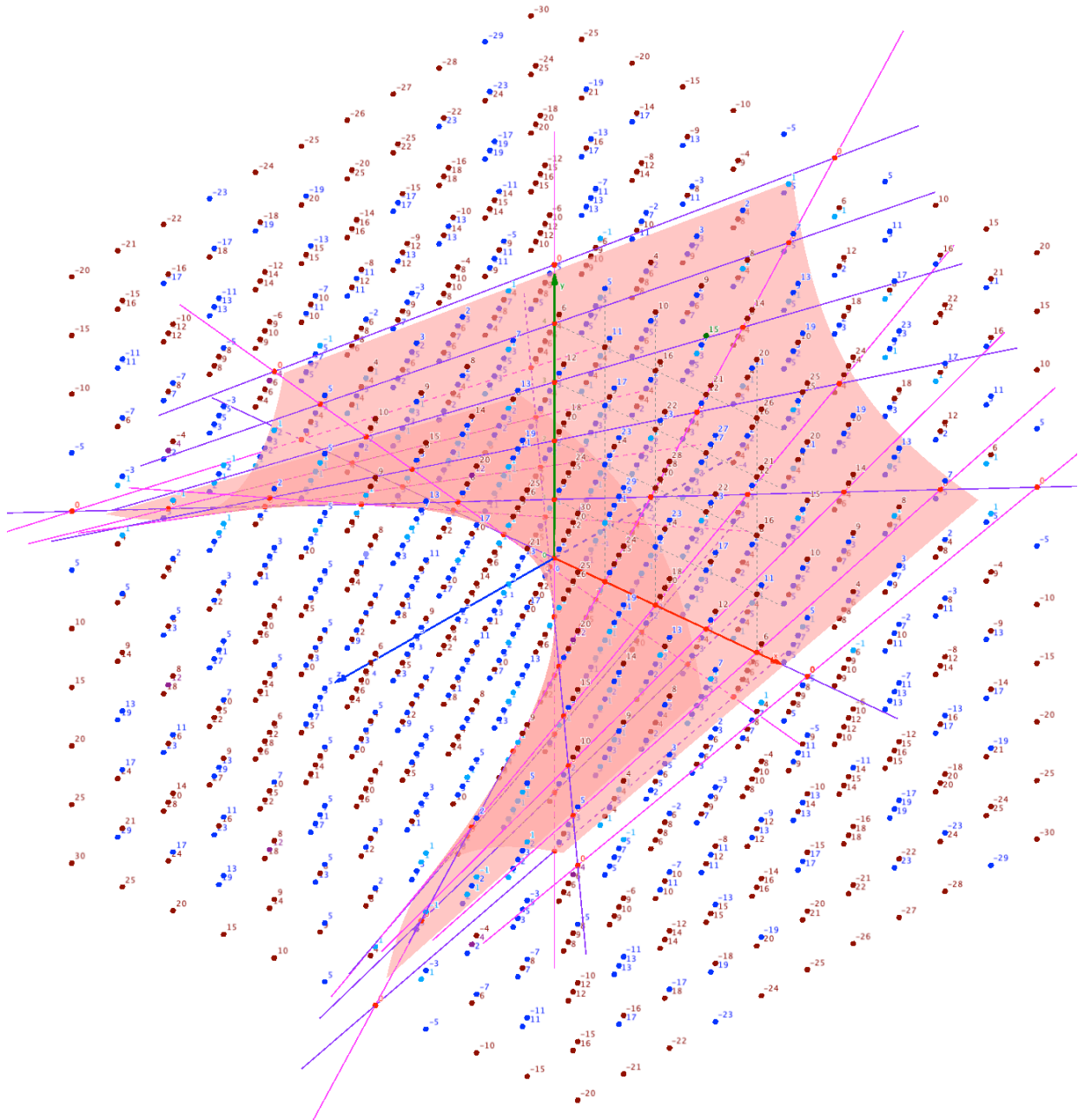


Figure 1. The ParaHyperCube  $a = 0$  with the lines of the Zeros forming a hyperbolic-paraboloid surface.

<https://photos.app.goo.gl/SFJXpADZJekz3C1y8>

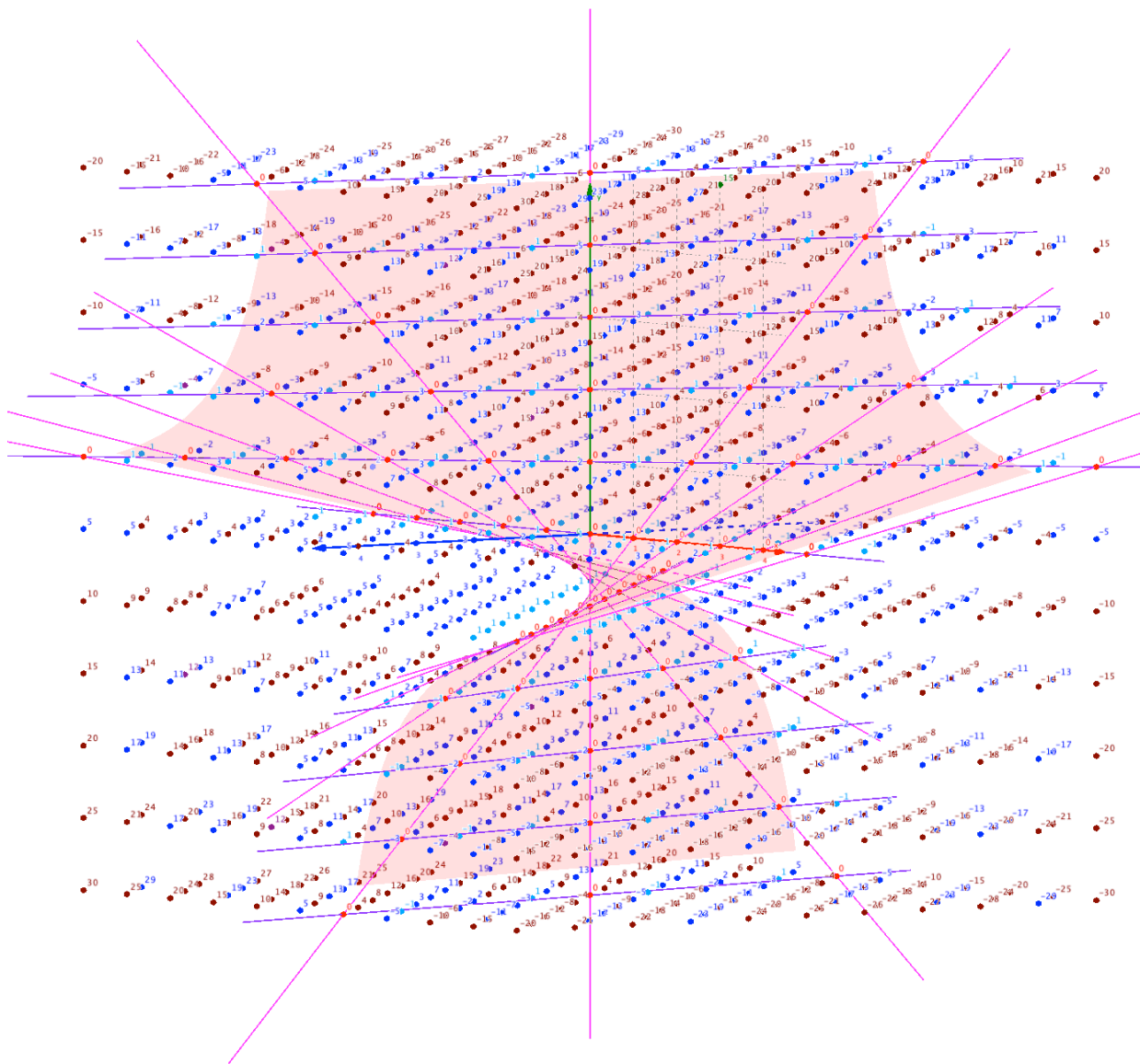


Figure 1. The ParaHyperCube  $a = 0$  with the lines of the Zeros forming a hyperbolic-paraboloid surface.

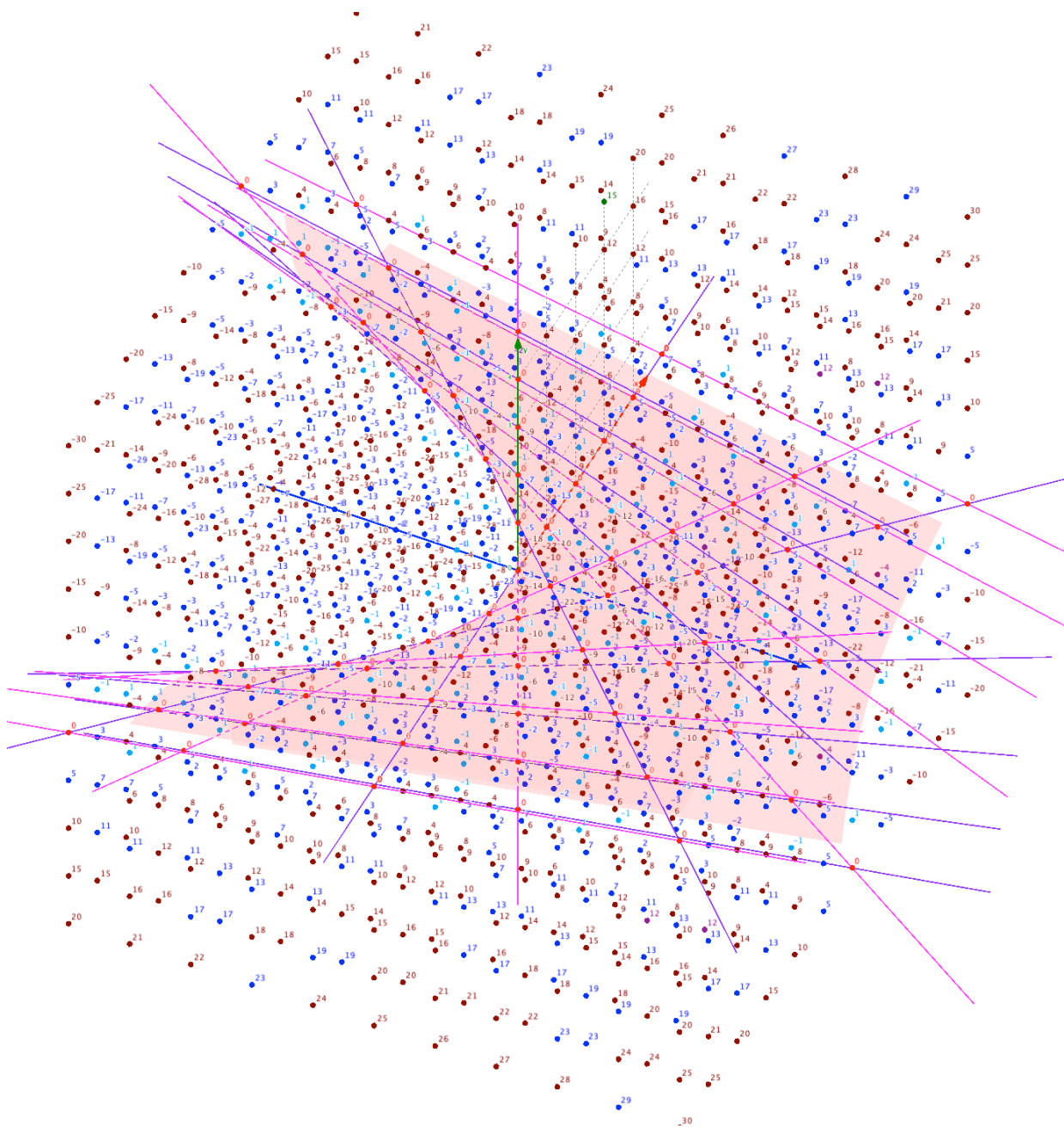


Figure 1. The ParaHyperCube  $a = 0$  with the lines of the Zeros forming a hyperbolic-paraboloid surface.



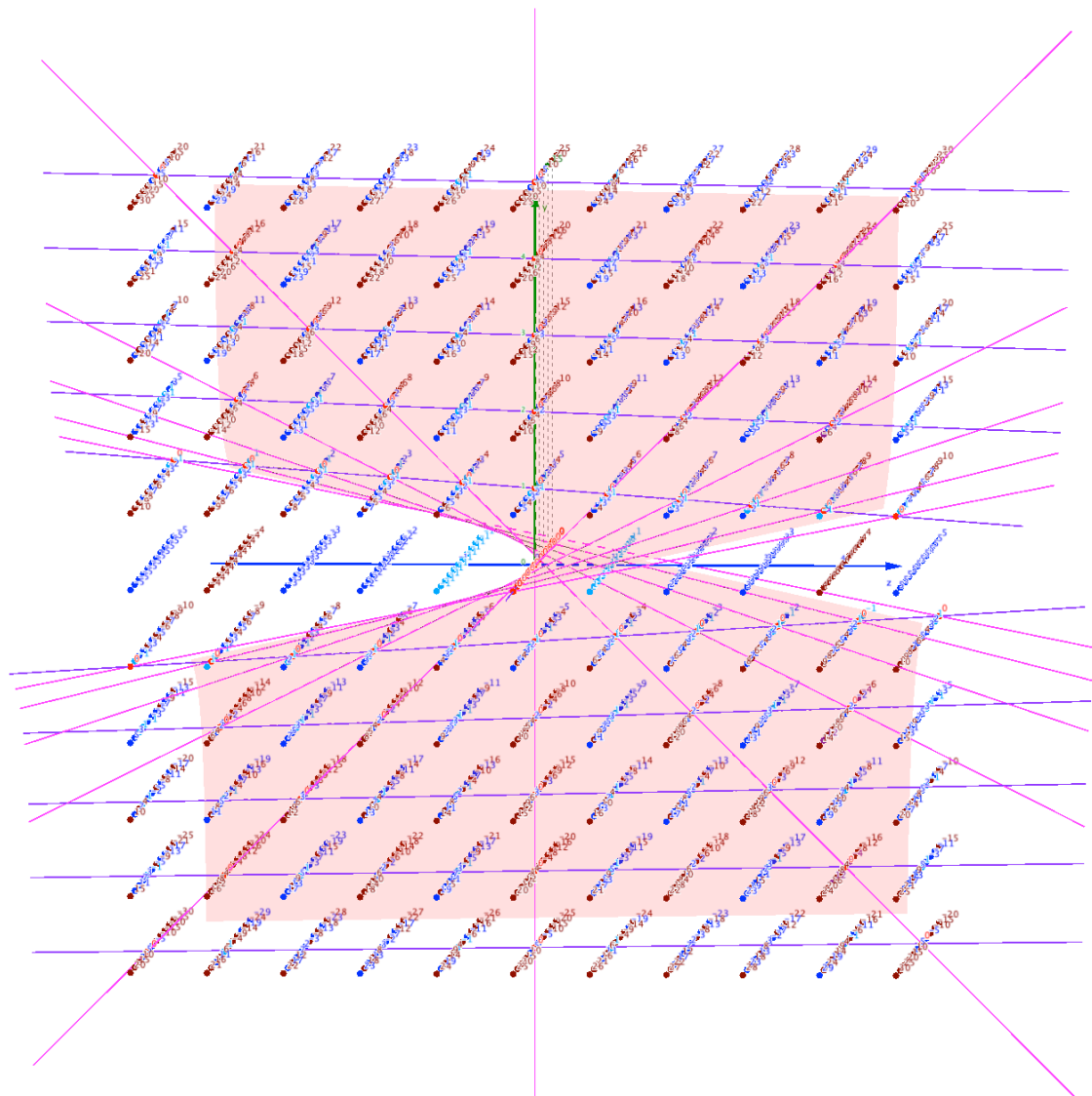


Figure 1. The ParaHyperCube  $a = 0$  with the lines of the Zeros forming a hyperbolic-paraboloid surface.

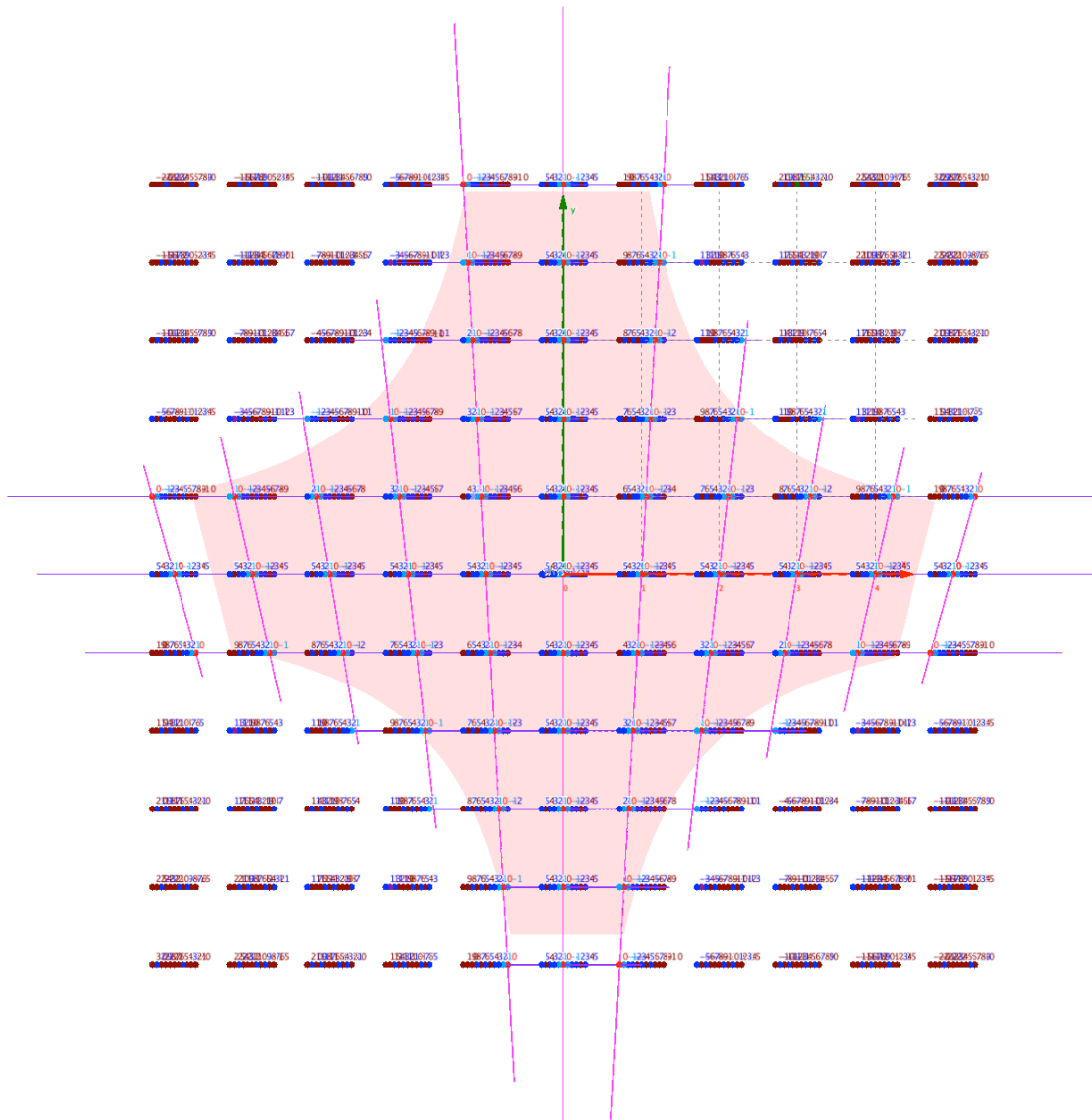


Figure 1. The ParaHyperCube  $a = 0$  with the lines of the Zeros forming a hyperbolic-paraboloid surface.

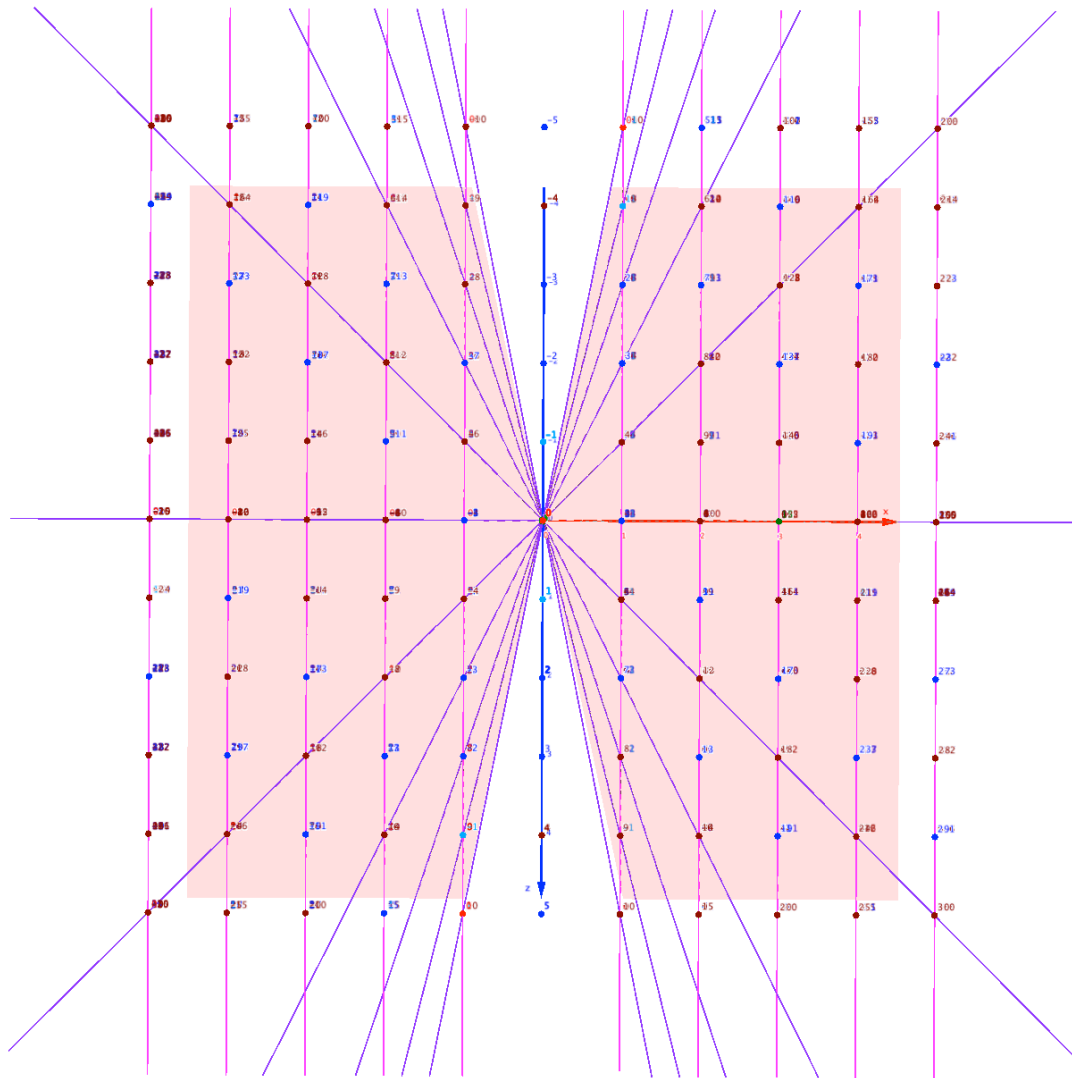


Figure 1. The ParaHyperCube  $a = 0$  with the lines of the Zeros forming a hyperbolic-paraboloid surface.

If we draw the lines for all the integers and then connect each one by a surface, we get parallel paraboloid hyperbolic surfaces.

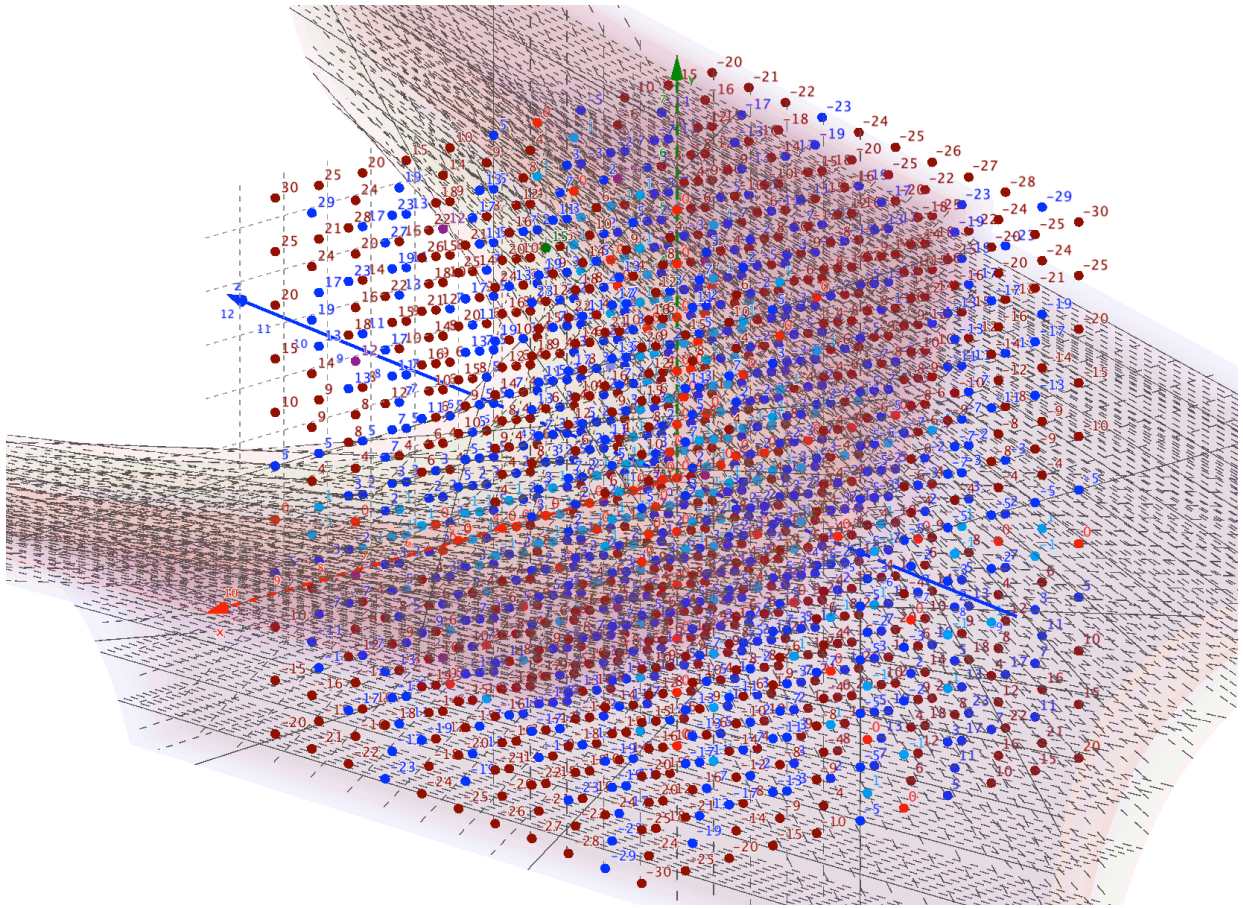


Figure 1. The multi parallel paraboloid hyperbolic surfaces. Each surface contains only one integer. In this figure, we show the 11 surfaces for the integers between -5 and 5.

<https://photos.app.goo.gl/YB7BsYDCmqZsxLdK9>

## Acknowledgments

I would like to thank all the essential support and inspiration provided by Mr. H. Bli Shem and my Family. Also, I would like to thank the editors of The On-Line Encyclopedia of Integer Sequences OEIS for their valuable comments on my submissions to the Encyclopedia. In direct and indirect ways, all were indispensable and helped me a lot to reach the current result.

## References

- [1] N. J. A. Sloane, The On-Line Encyclopedia of Integer Sequences, available online at <http://oeis.org>.
- [2] NNTDM Conventions, notations, and abbreviations in studies
- [3] Paraboctys
- [4] Hyperboctys