8 КЛАСС. АЛГЕБРА.

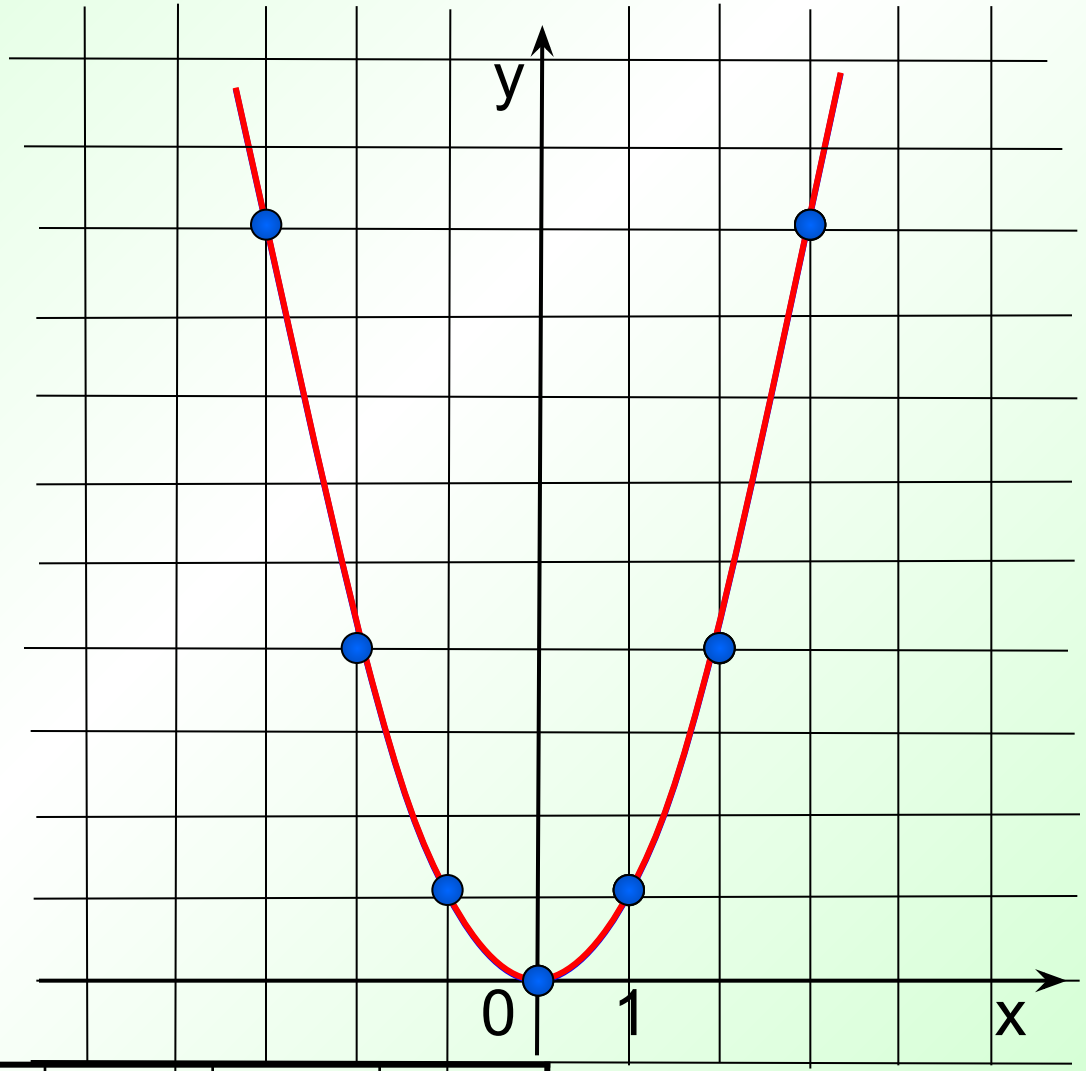
Ш.А. АЛИМОВ

Квадратичная функция

$$y = a(x - x_0)^2 + y_0$$

$y = x^2$

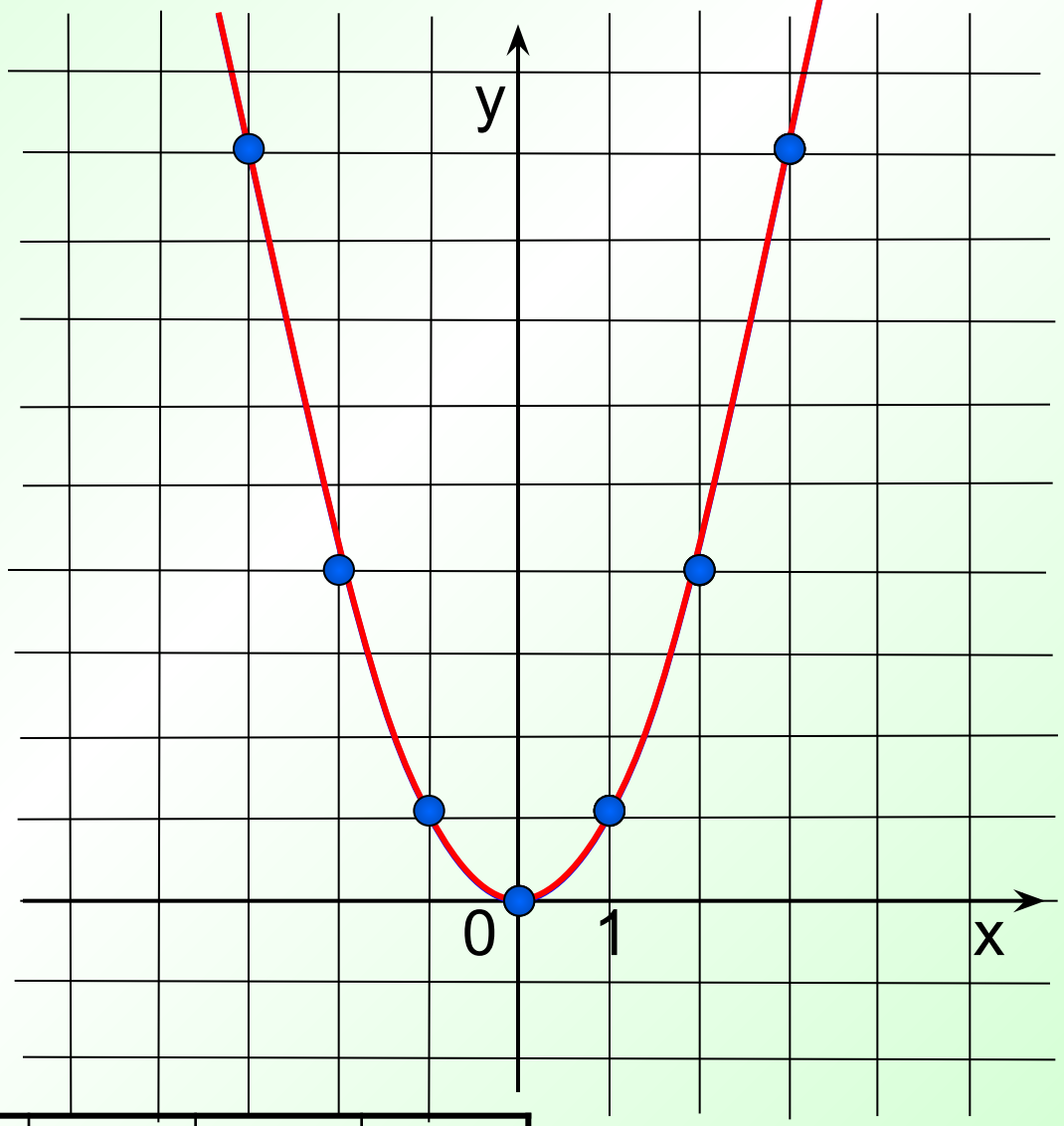
$y = x^2 + 3$



x	- 3	- 2	-1	0	1	2	3
y	12	7	4	3	4	7	12

$y = x^2$

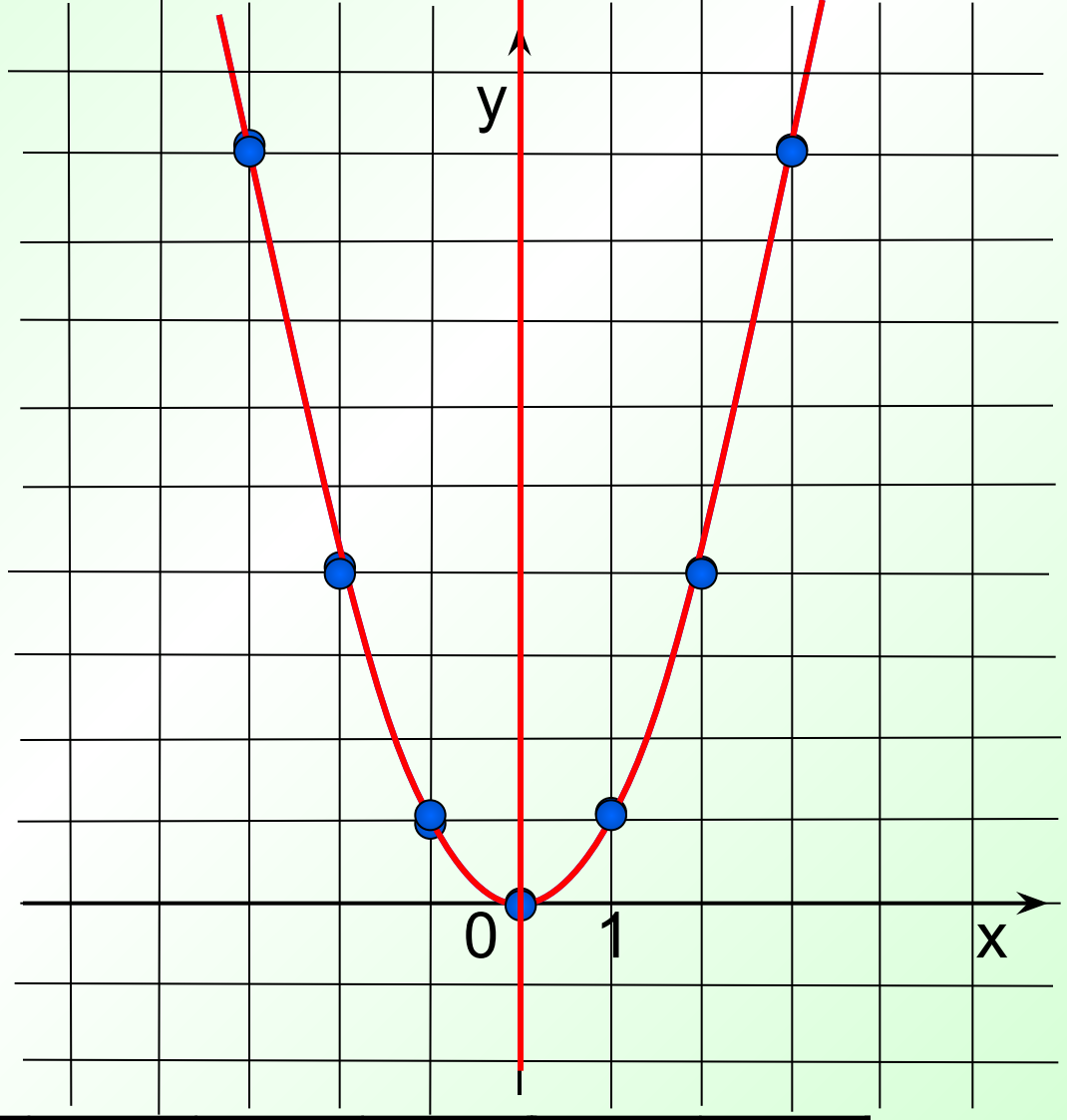
$y = x^2 - 2$



x	- 3	- 2	-1	0	1	2	3
y	9 7	4 2	-1	-2 0	-1 1	2 4	7 9

$y = x^2$

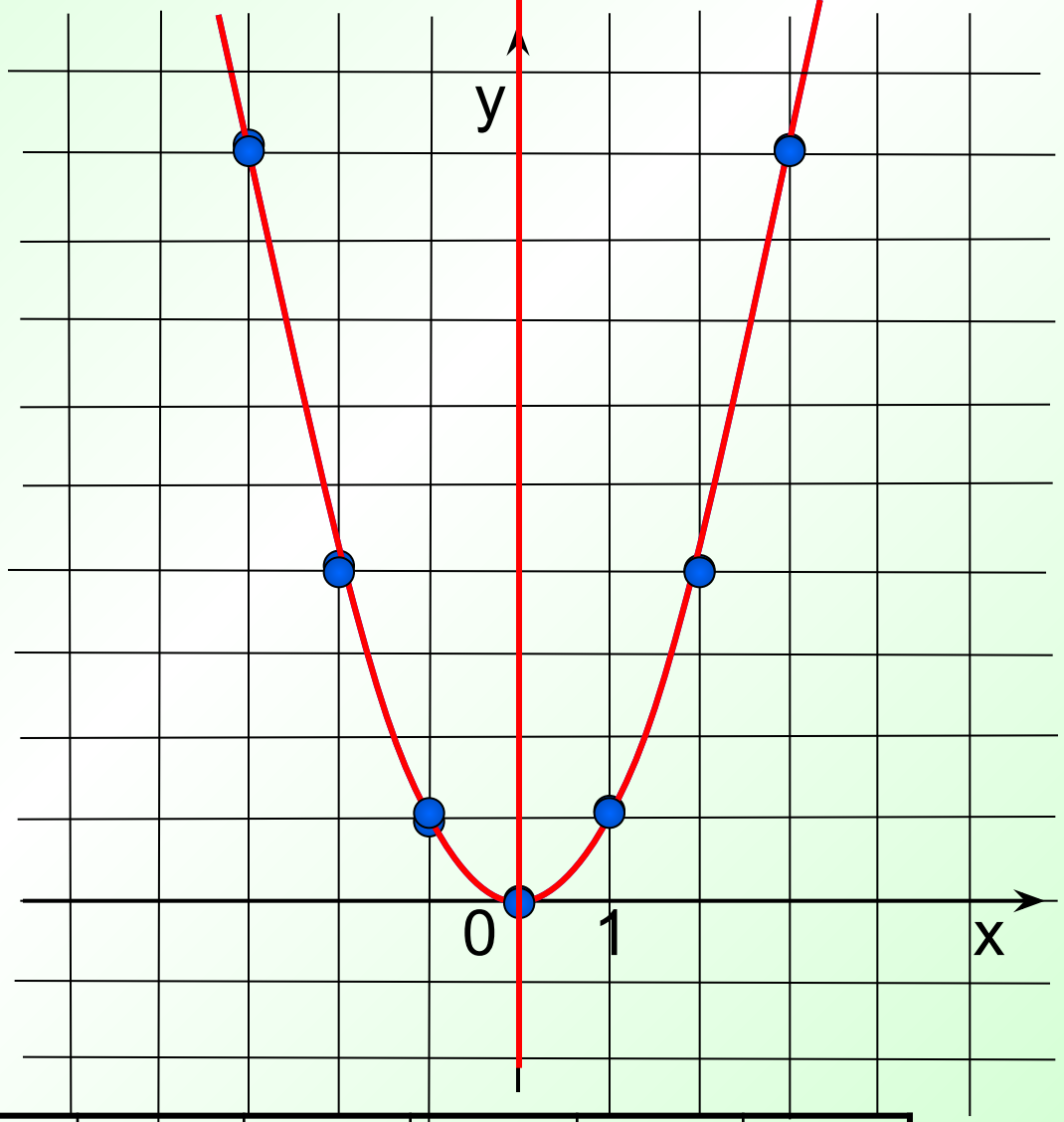
$y = (x - 2)^2$



x	- 3	- 2	-1	0	1	2	3	4	5
y	25	16	9	4	1	0	1	4	9

$y = x^2$

$y = (x + 2)^2$

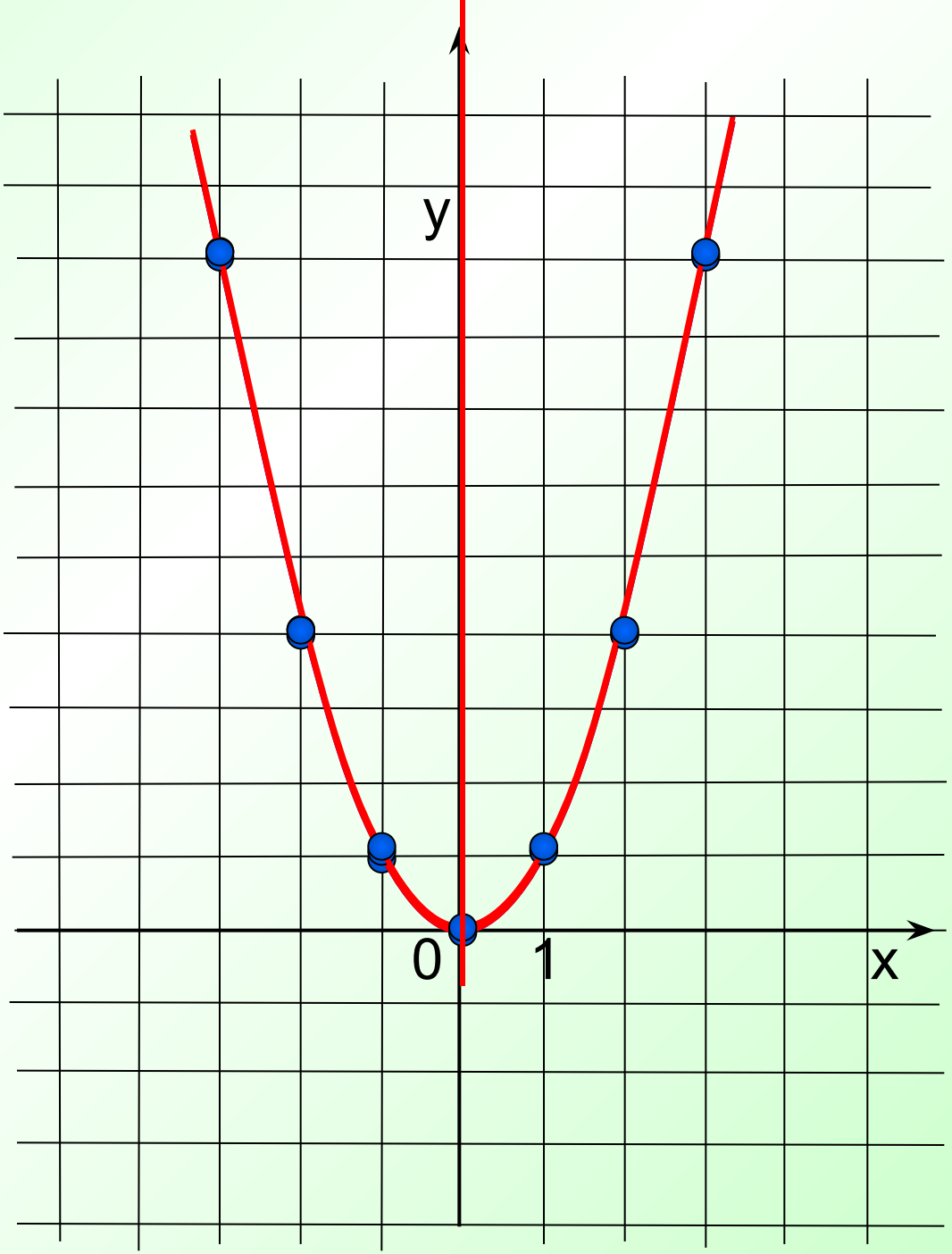


x	-5	-4	-3	-2	-1	0	1	2	3
y	9	4	1	0	1	4	9	16	25

$y = x^2$

$y = (x + 1)^2$

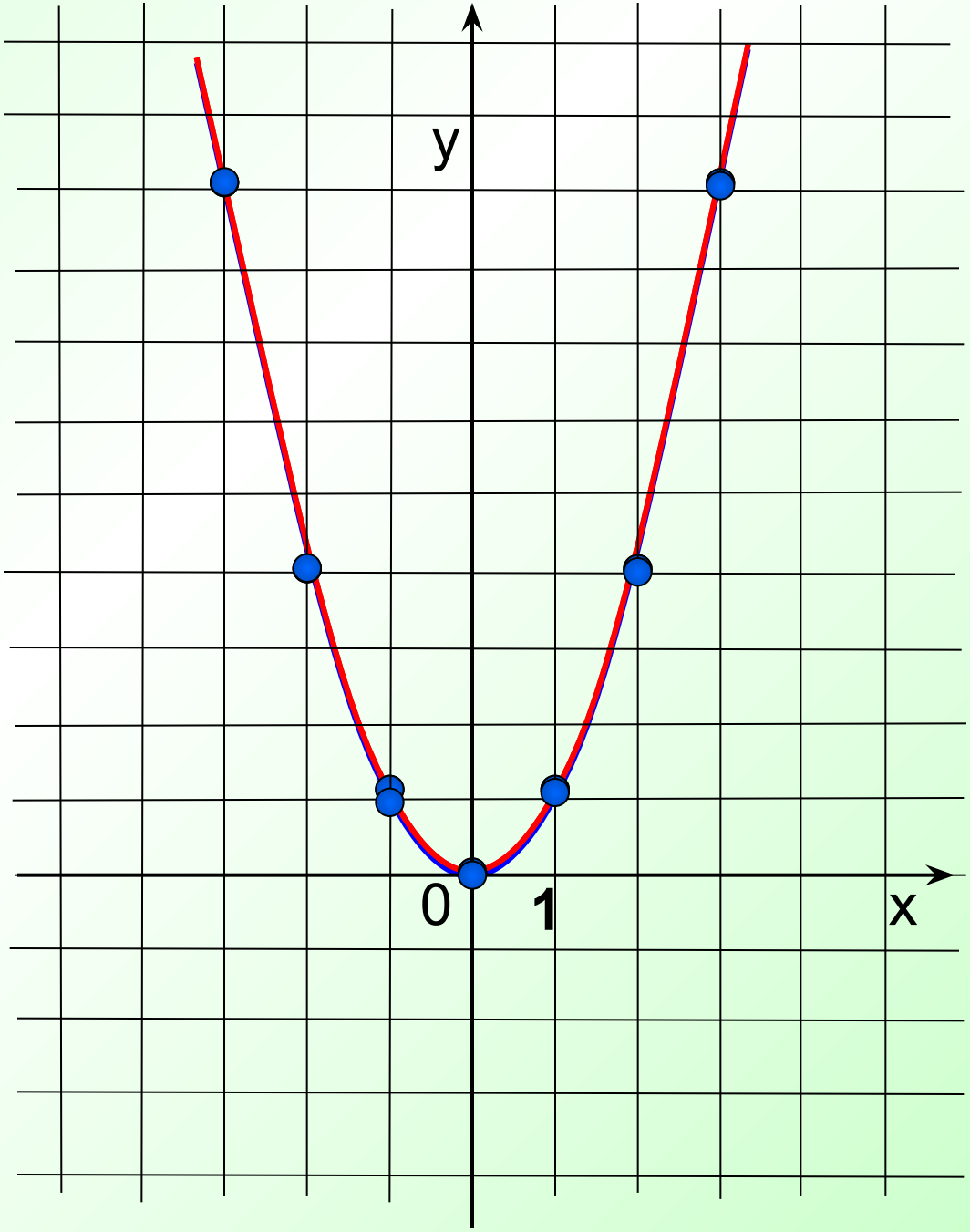
$y = (x - 3)^2$



$y = x^2$

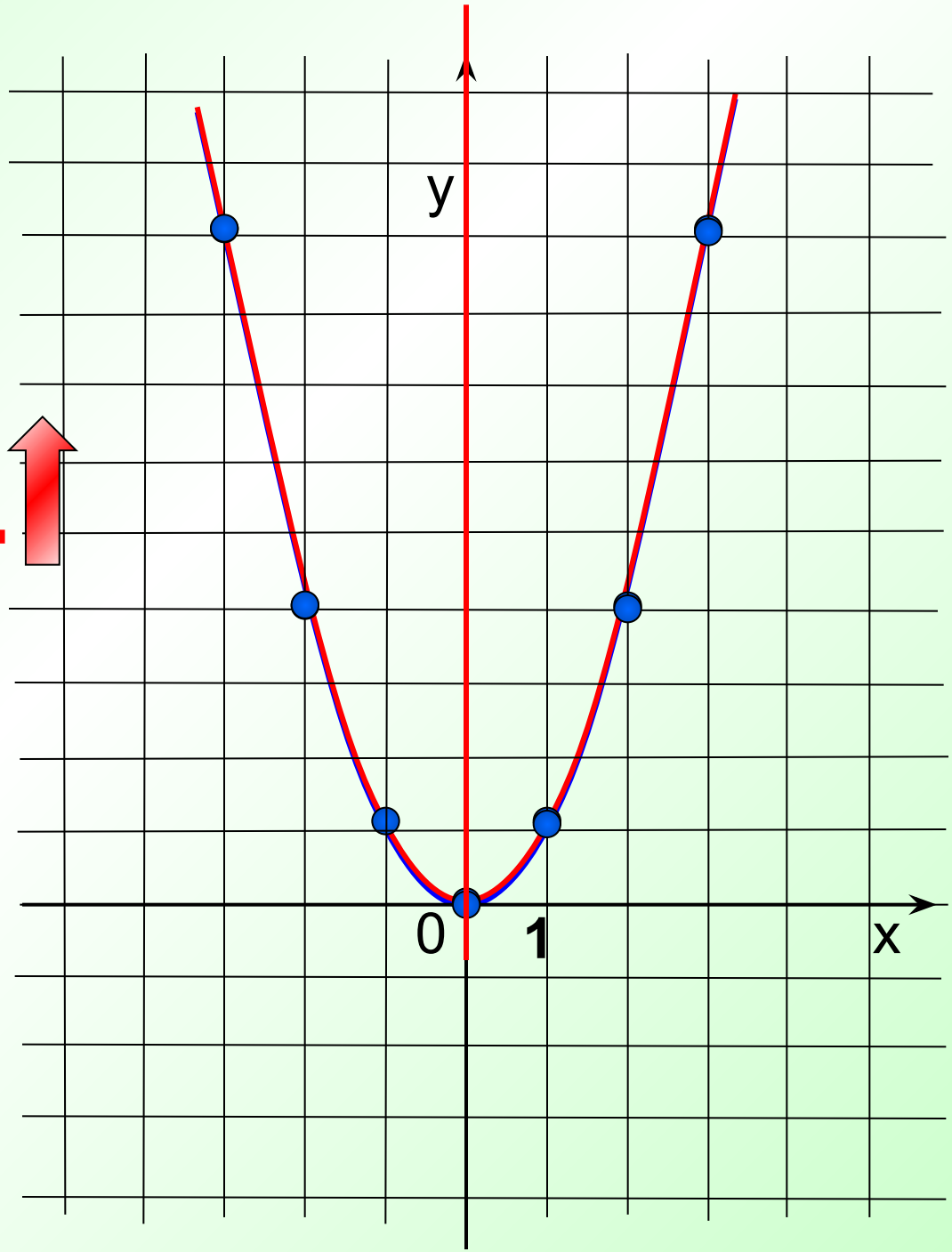
$y = x^2 + 4$

$y = x^2 - 3$



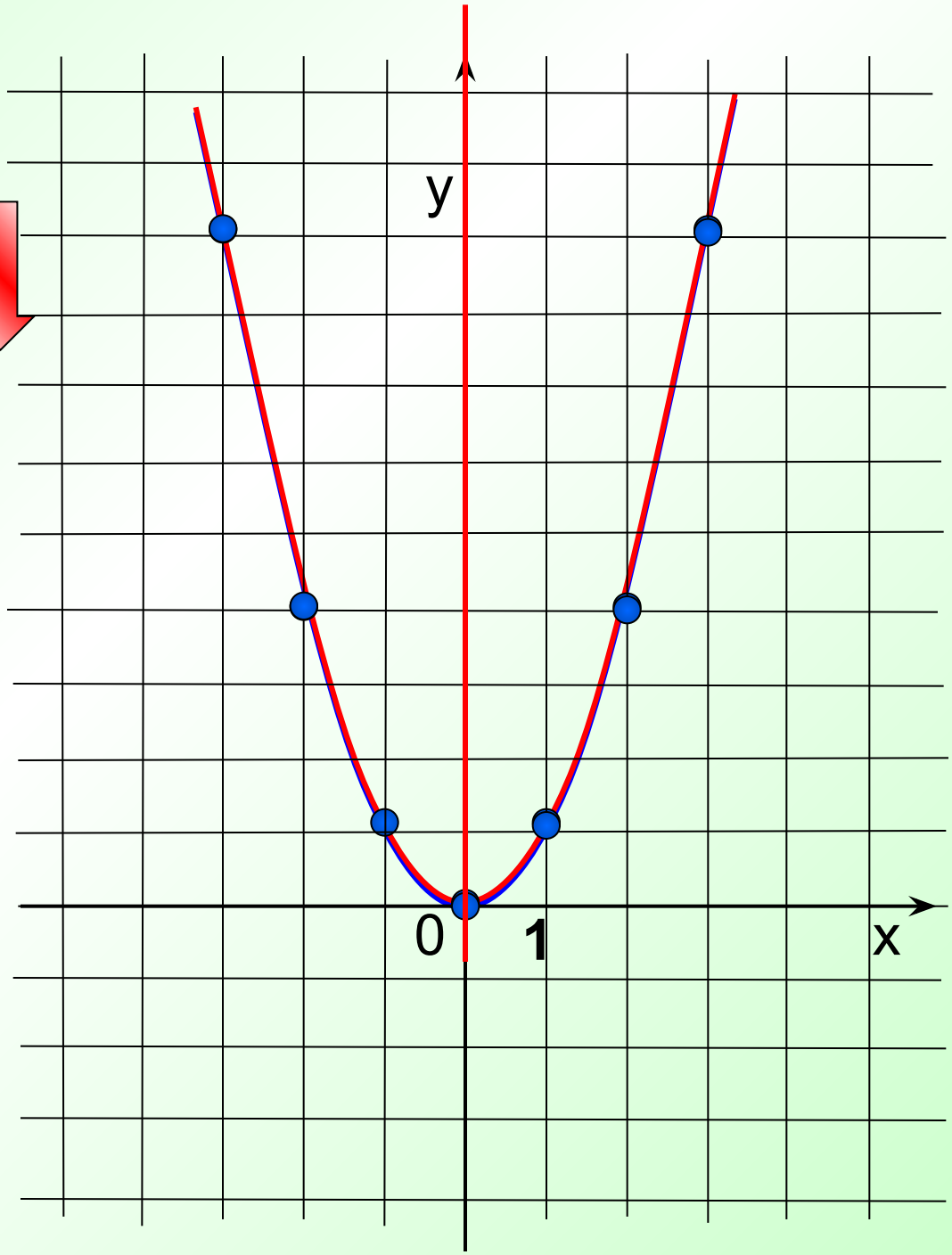
$y = x^2$

$y = (x-2)^2 + 4$



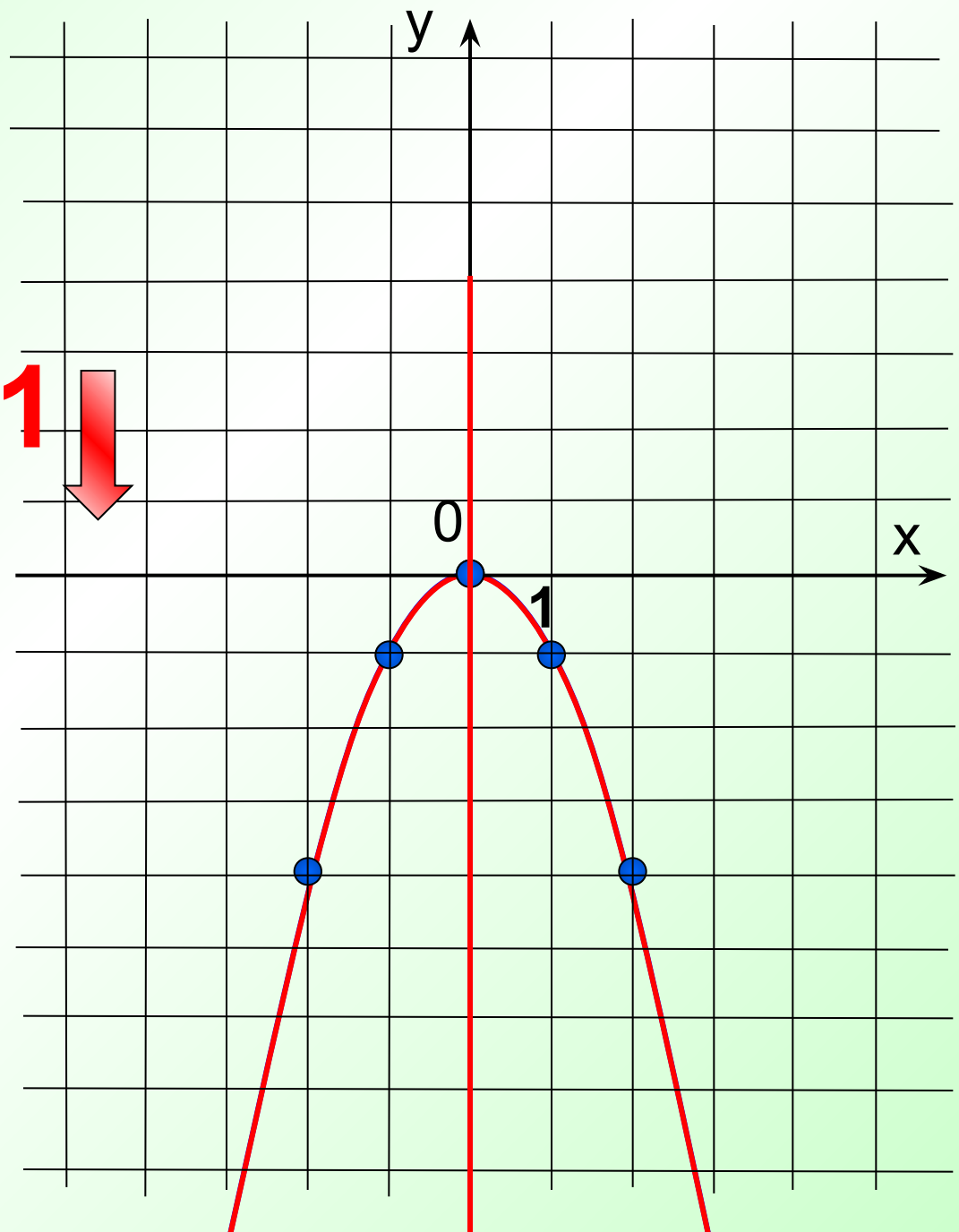
$y = x^2$

$y = (x+3)^2 - 4$



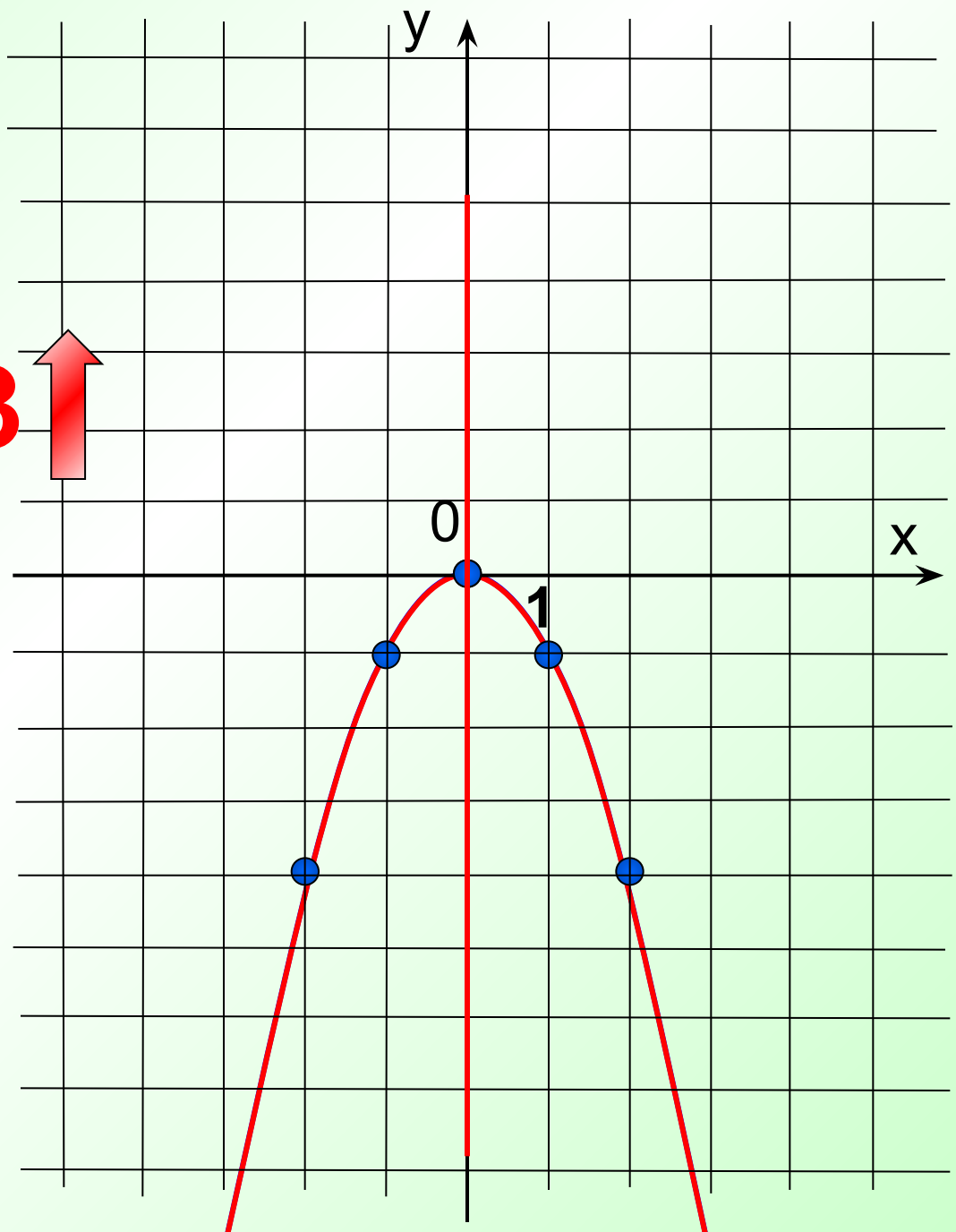
$y = -x^2$

$y = -(x+3)^2 - 1$



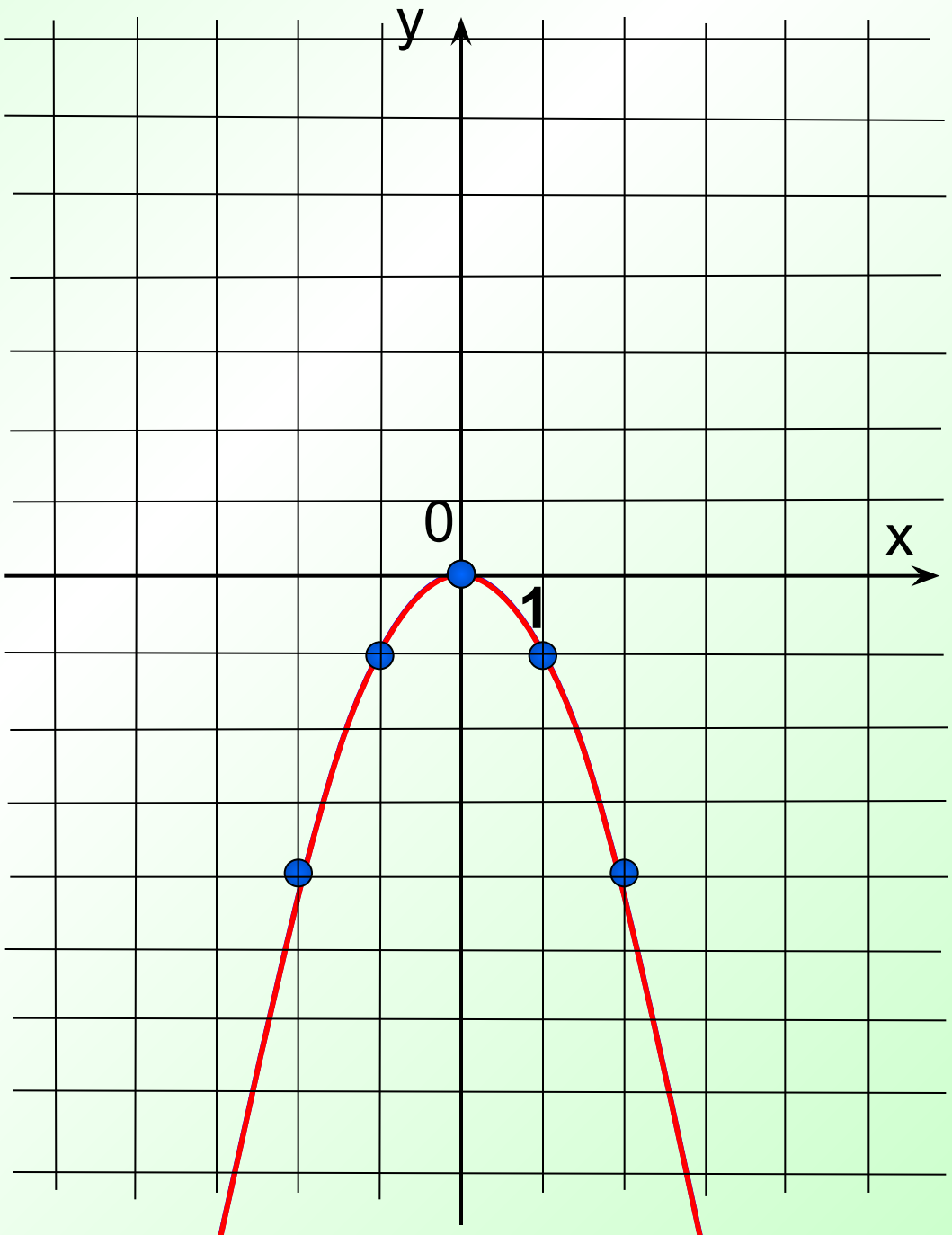
$y = -x^2$

$y = -(x-3)^2 + 3$



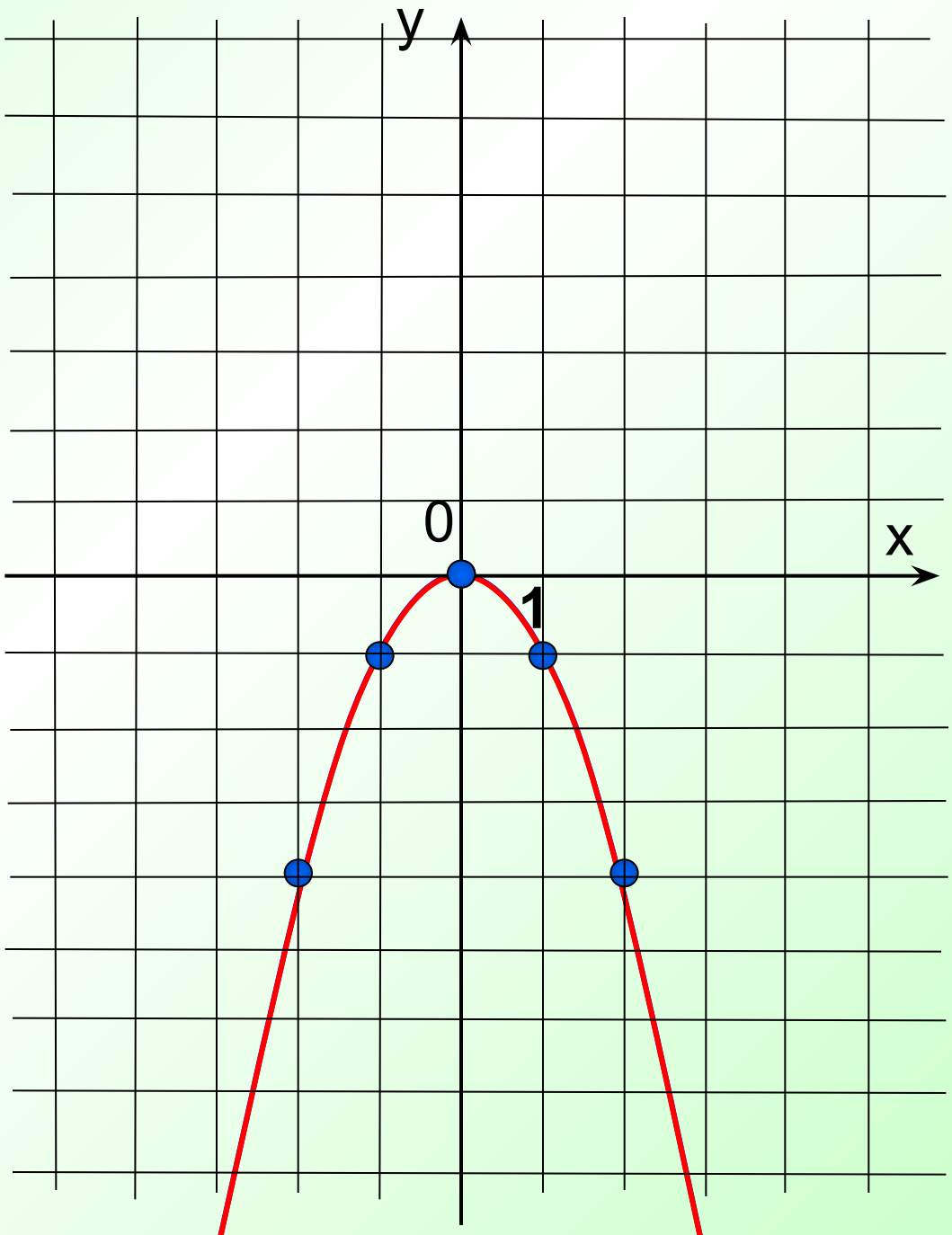
$y = x^2$

$y = -x^2 + 6$



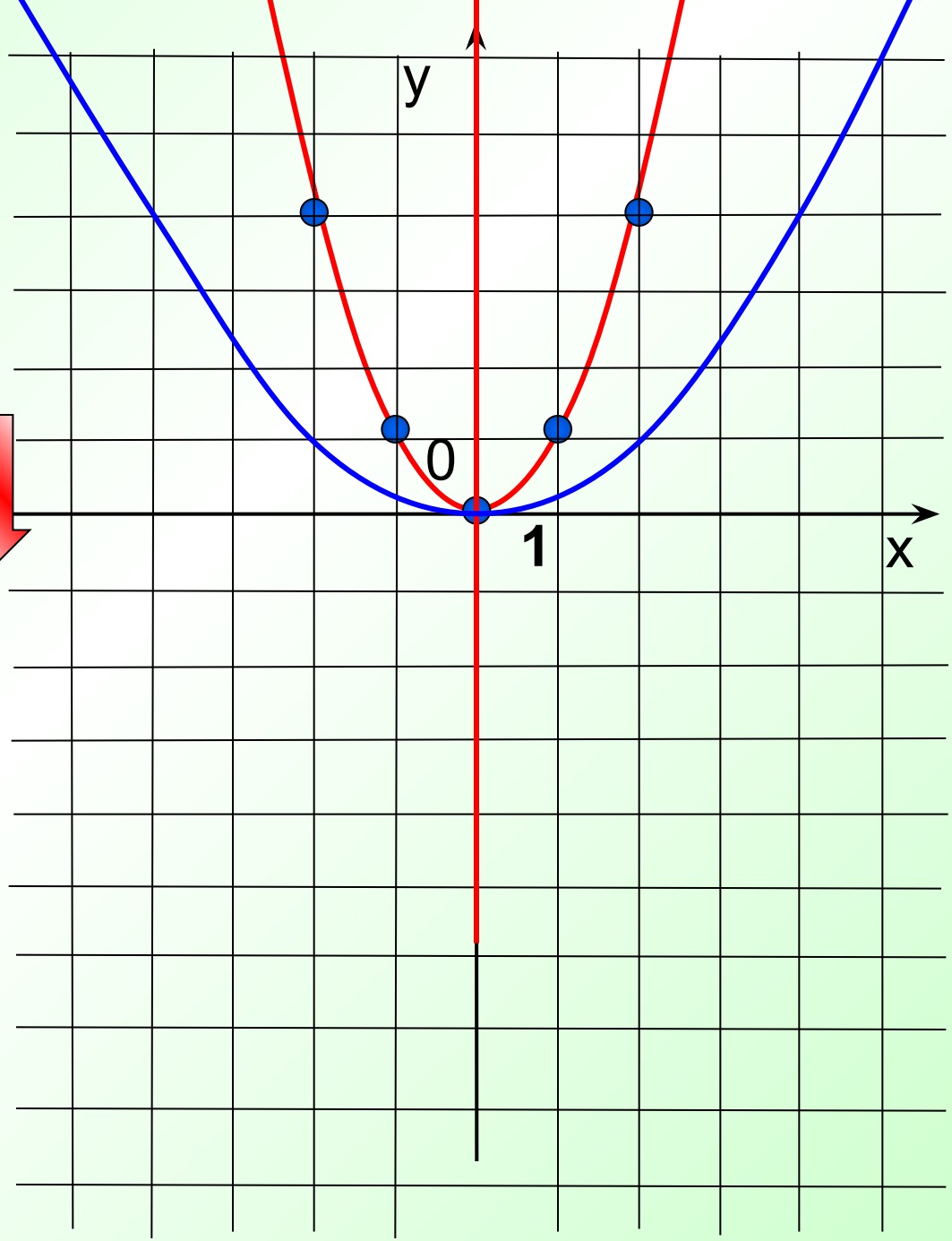
$y = -3x^2$

$y = -3x^2 + 6$



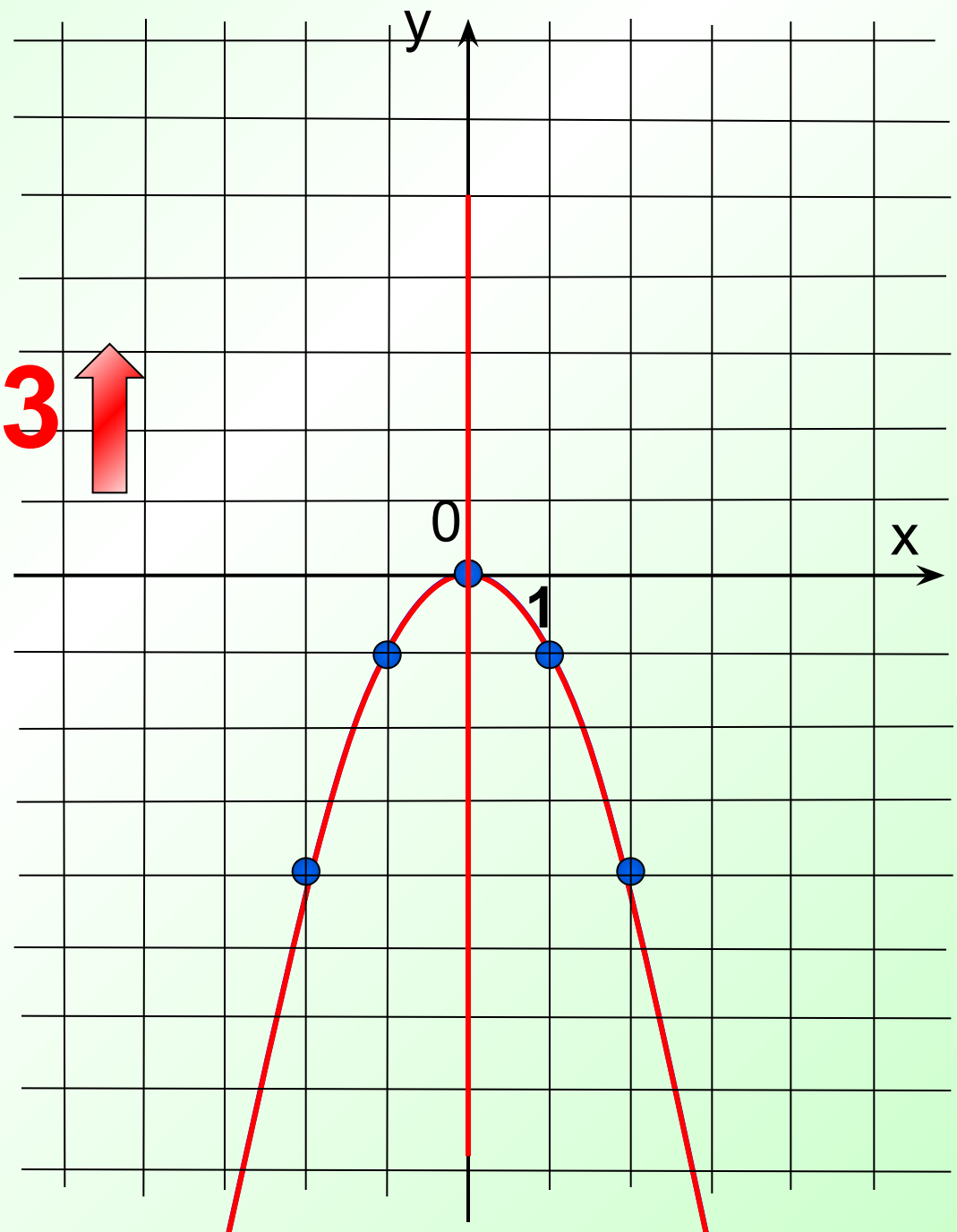
$$y = \frac{1}{4}x^2$$

$$y = \frac{1}{4}(x-1)^2 - 4$$



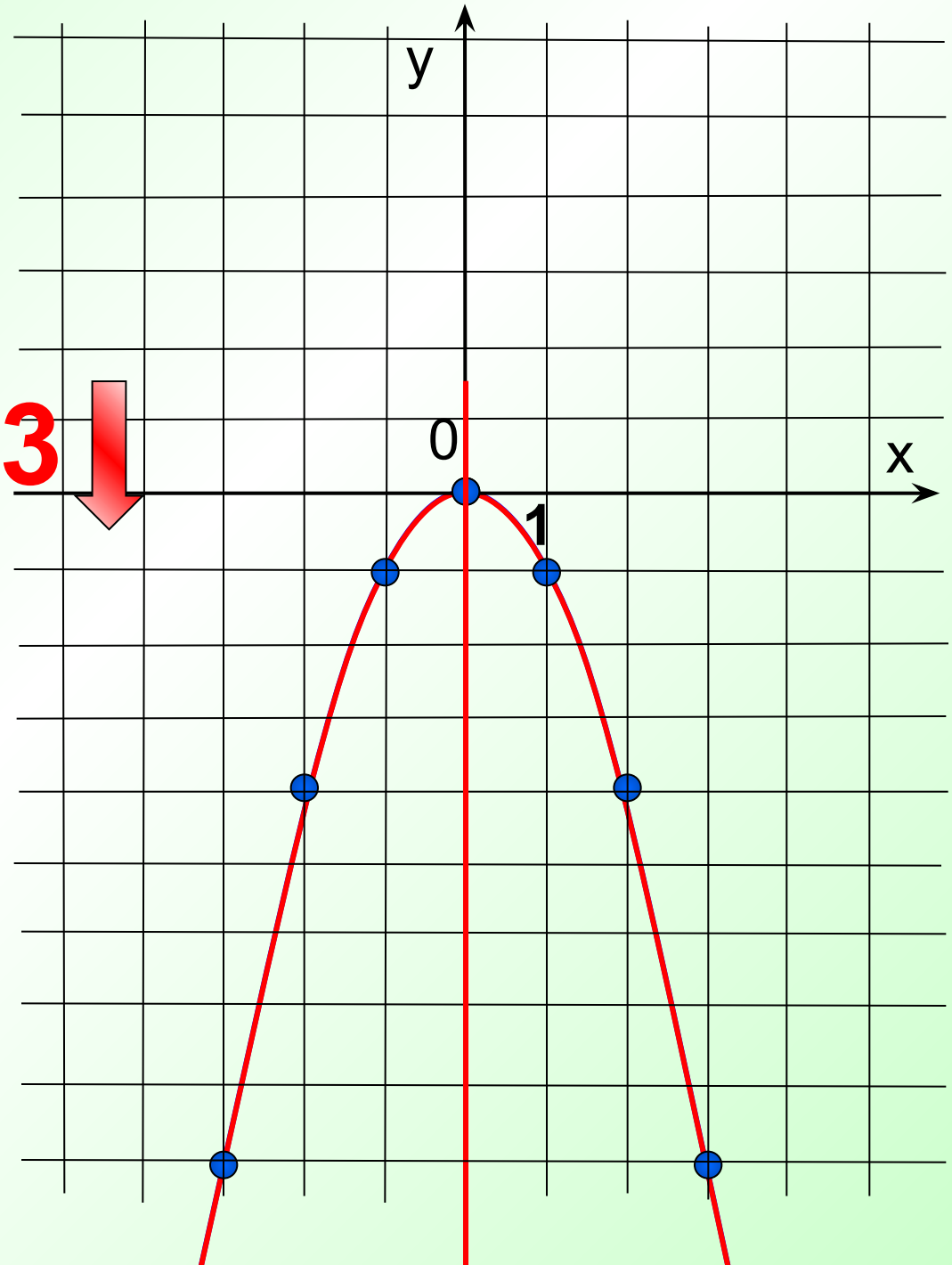
$y = -2x^2$

$y = -2(x-2)^2 + 3$



$$y = \frac{1}{2}x^2$$

$$y = -\frac{1}{2}(x+1)^2 - 3$$



$$y = a(x - x_0)^2 + y_0$$

Вершина параболы $(x_0; y_0)$

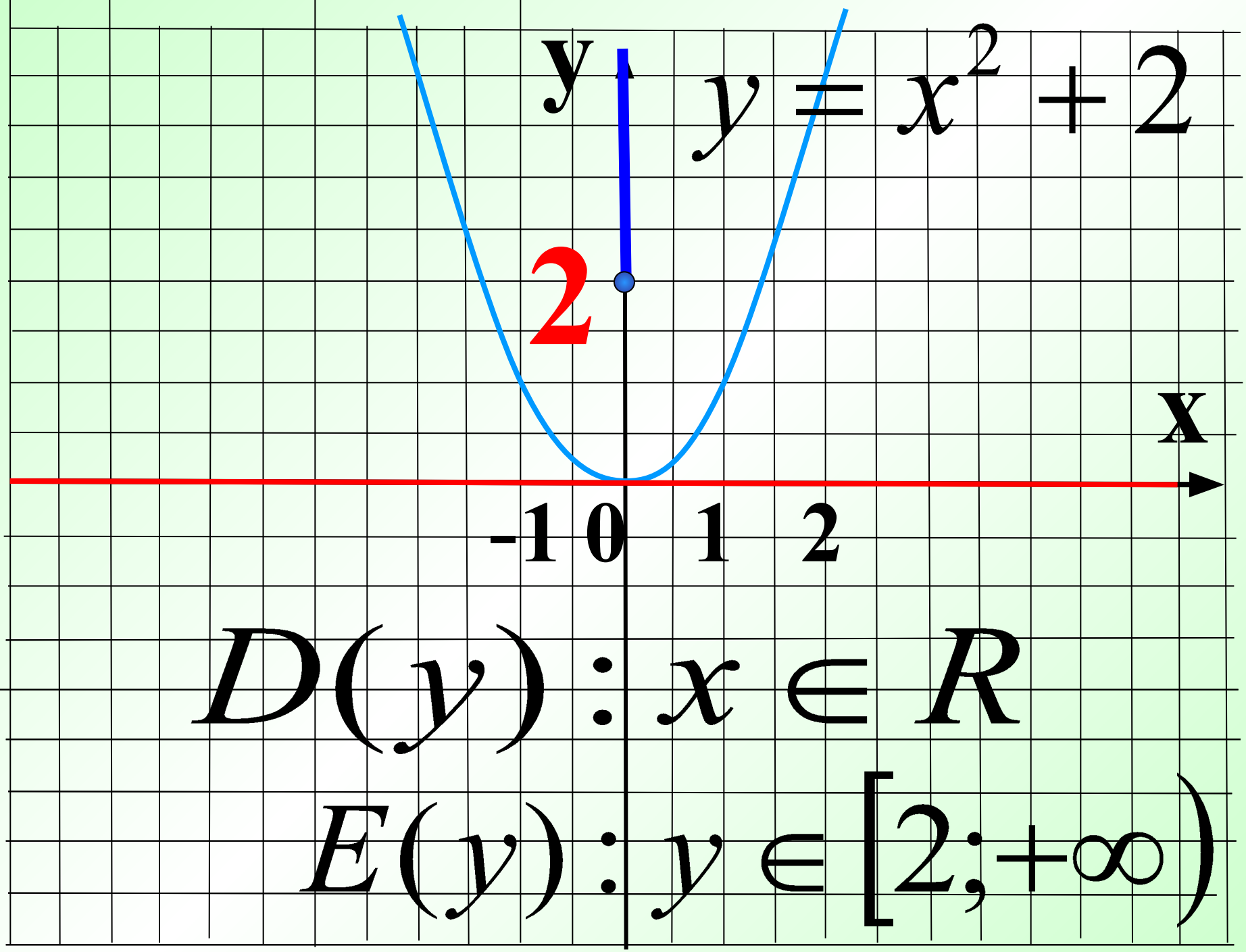
Ось симметрии $x = x_0$

Шаблон $y = ax^2$

$a > 0$, то ветви направлены вверх

$a < 0$, то ветви направлены вниз

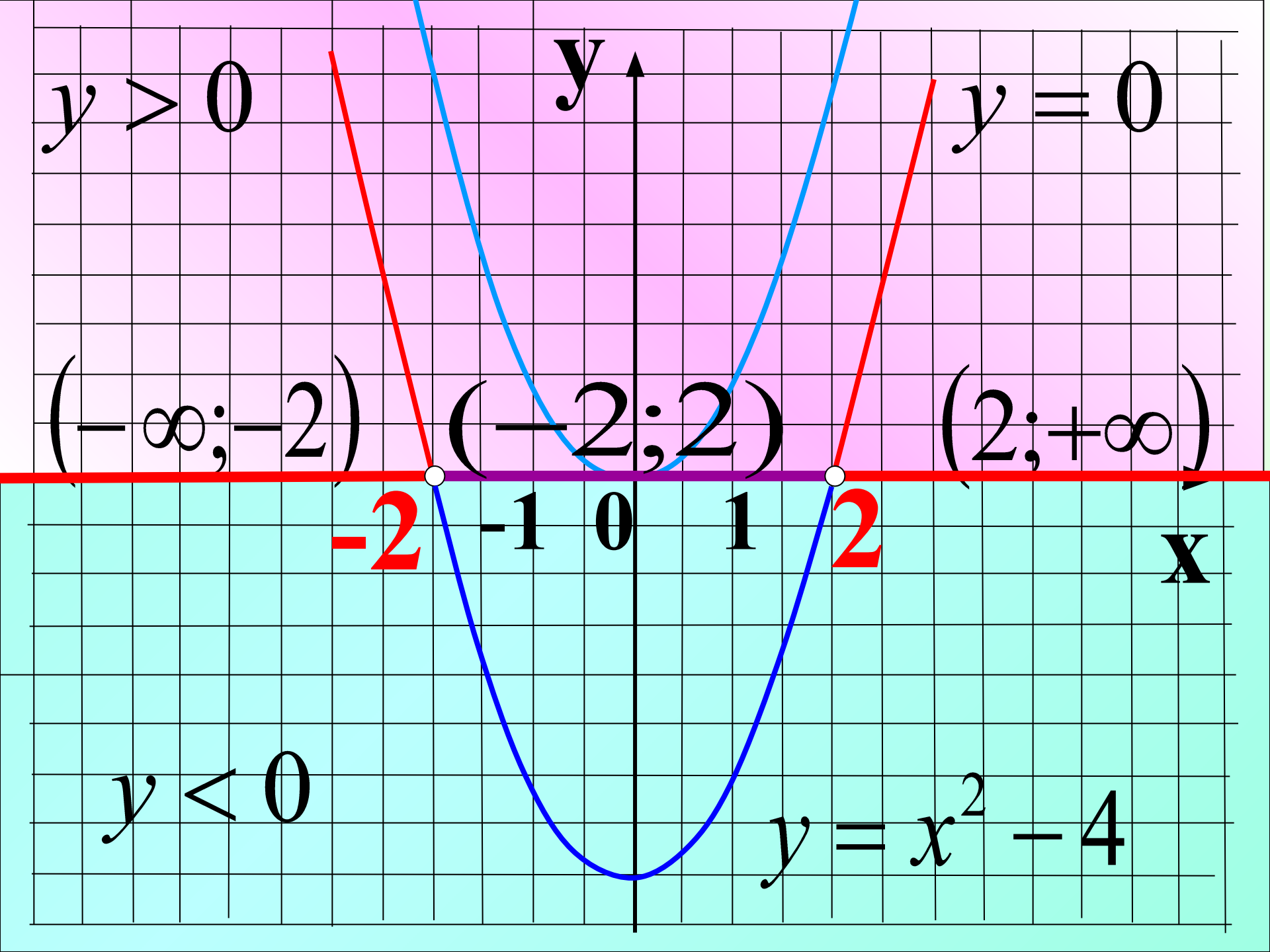
	Направл ветвей	Вершина	Ось сим.	Шаблон
$y = x^2 + 5$		(0; 5)	x = 0	$y = x^2$
$y = (x-2)^2 + 5$		(2; 5)	x = 2	$y = x^2$
$y = 2x^2 - 3$		(0; -3)	x = 0	$y = 2x^2$
$y = -(x+3)^2 - 2$		(-3; -2)	x = -3	$y = x^2$
$y = 2(x-1)^2 + 1$		(1; 1)	x = 1	$y = 2x^2$
$y = -3(x+2)^2 - 4$		(-2; -4)	x = -2	$y = 3x^2$
$y = -(x+3)^2$		(-3; 0)	x = -3	$y = x^2$
$y = 2(x-4)^2$		(4; 0)	x = 4	$y = 2x^2$

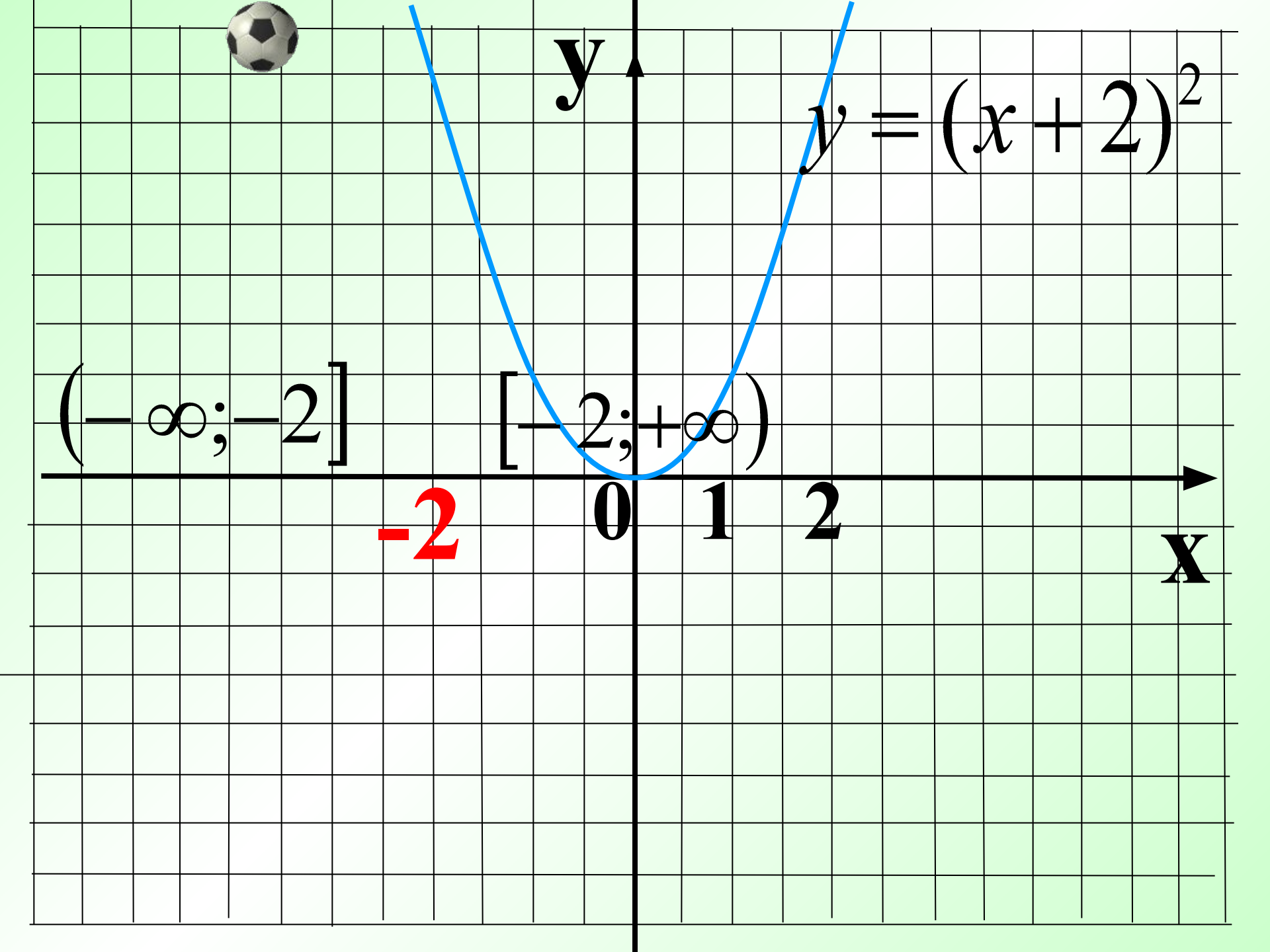


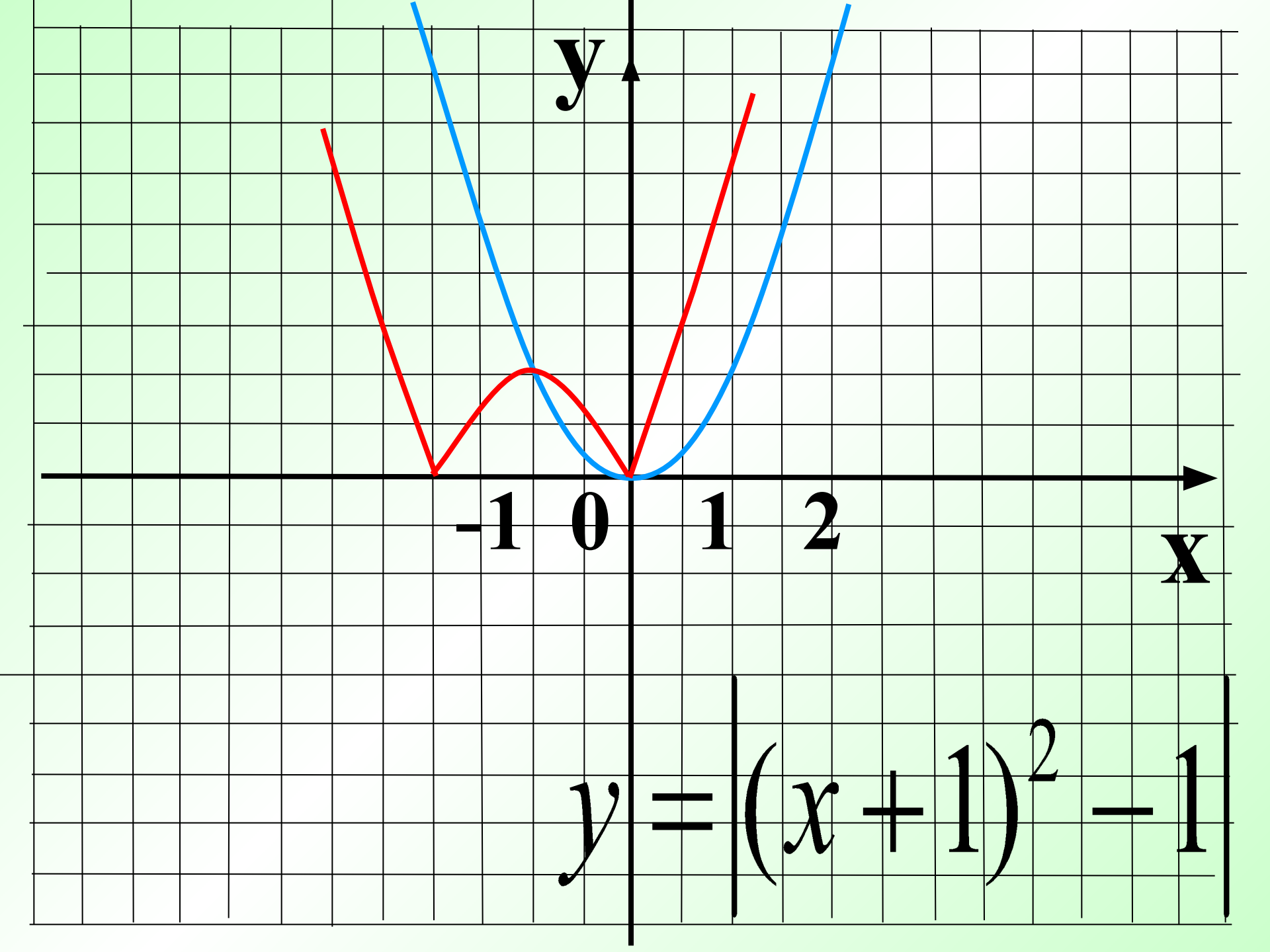
$$y = x^2 + 2$$

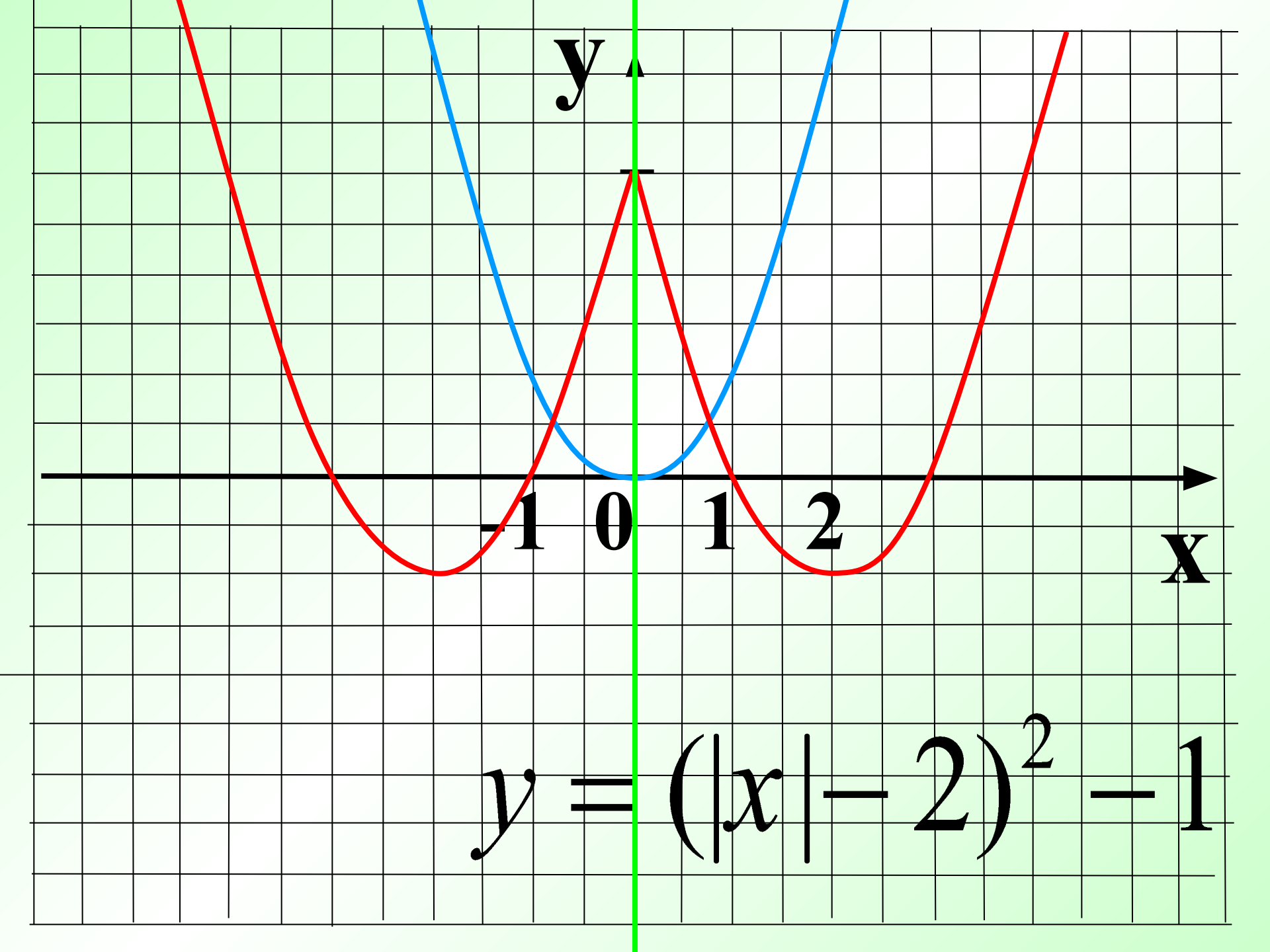
$$D(y): x \in R$$

$$E(y): y \in [2; +\infty)$$


y
x
y > 0
y = 0
y < 0
y = x² − 4
(−∞;−2)
(−2;2)
(2;+∞)
-2
-1
0
1
2


y
$y = (x+2)^2$
$(-\infty;-2]$
$[-2;+\infty)$
-2
0
1
2
x


y
x
-1
0
1
2
$y = |(x+1)^2 - 1|$



$$y = (|x| - 2)^2 - 1$$