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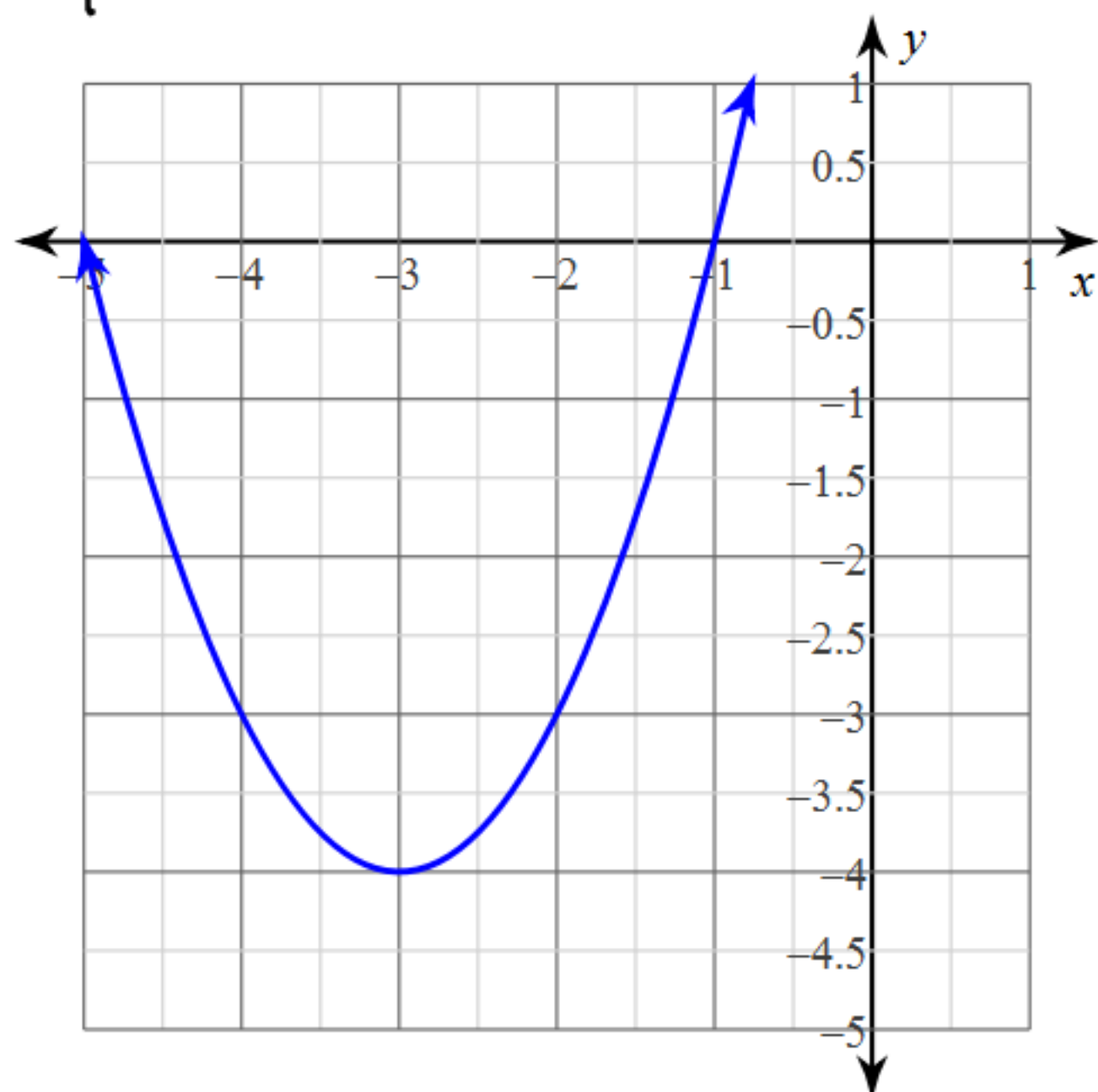
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→

1-up

Use the information provided to write the intercept form equation of each parabola.

3) April 28



$$y = a(x - 5)(x - 1)$$

$$y = a(x + 5)(x + 1)$$

$$-4 = a(-3 + 5)(-3 + 1)$$

$$-4 = a(2)(-2)$$

$$-4 = -4a$$

$$\frac{-4}{-4} = \frac{-4a}{-4}$$

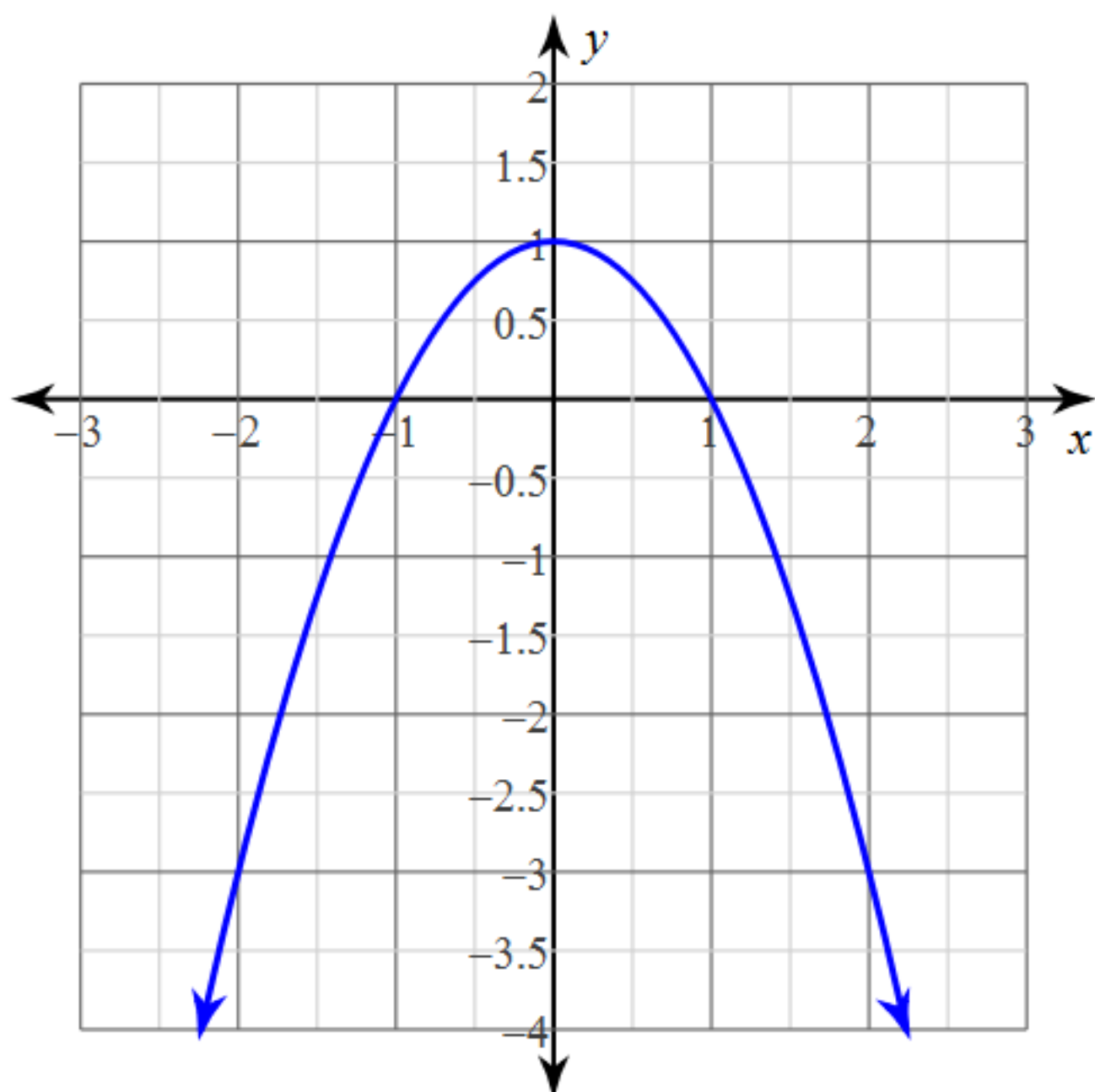
Vertex $(-3, -4)$
 Zeros $\{-5, -1\}$

$$a = 1$$

$$y = 1(x + 5)(x + 1)$$

Use the information provided to write the intercept form equation of each parabola.

5)



$$y = a(x - s)(x - t)$$

$$y = a(x + 1)(x - 1)$$

$$1 = a(0 + 1)(0 - 1)$$

$$1 = a(1)(-1)$$

$$1 = -1a$$

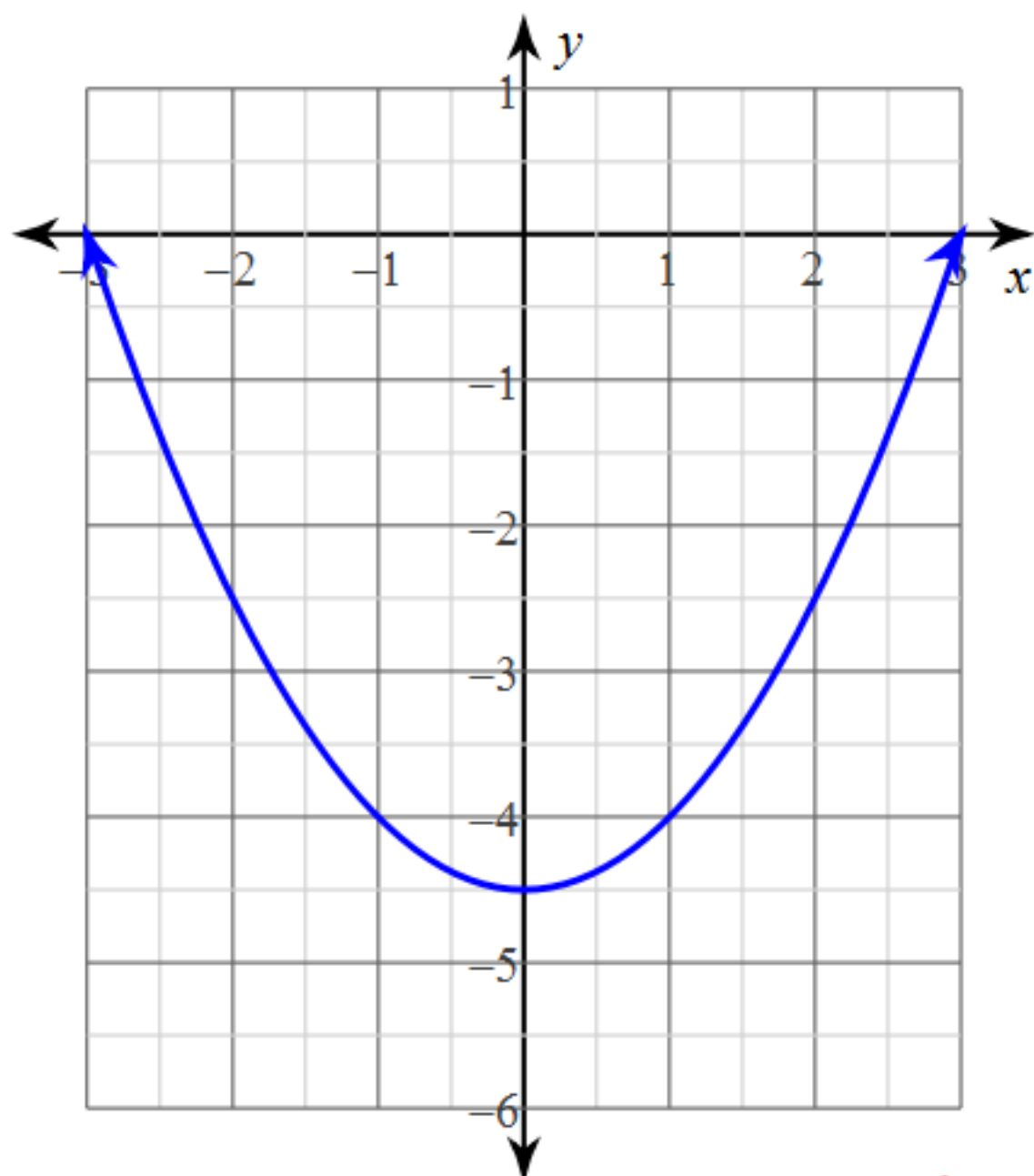
$$\frac{1}{-1} = \frac{-1a}{-1}$$

Vertex (0, 1)
 zeros $\{-1, 1\}$

$$y = -1(x + 1)(x - 1)$$

Use the information provided to write the intercept form equation of each parabola.

6)



Vertex $(0, -4.5)$
 Zeros $\{-3, 3\}$

$$\begin{aligned}
 y &= a(x-5)(x-t) \\
 y &= a(x+3)(x-3) \\
 -4.5 &= a(0+3)(0-3) \\
 -4.5 &= a(3)(-3) \\
 -4.5 &= -9a \\
 \frac{-4.5}{-9} &= \frac{-9a}{-9}
 \end{aligned}$$

$$\begin{aligned}
 0.5 &= a \\
 y &= \frac{1}{2}(x+3)(x-3) \quad a = \frac{1}{2}
 \end{aligned}$$

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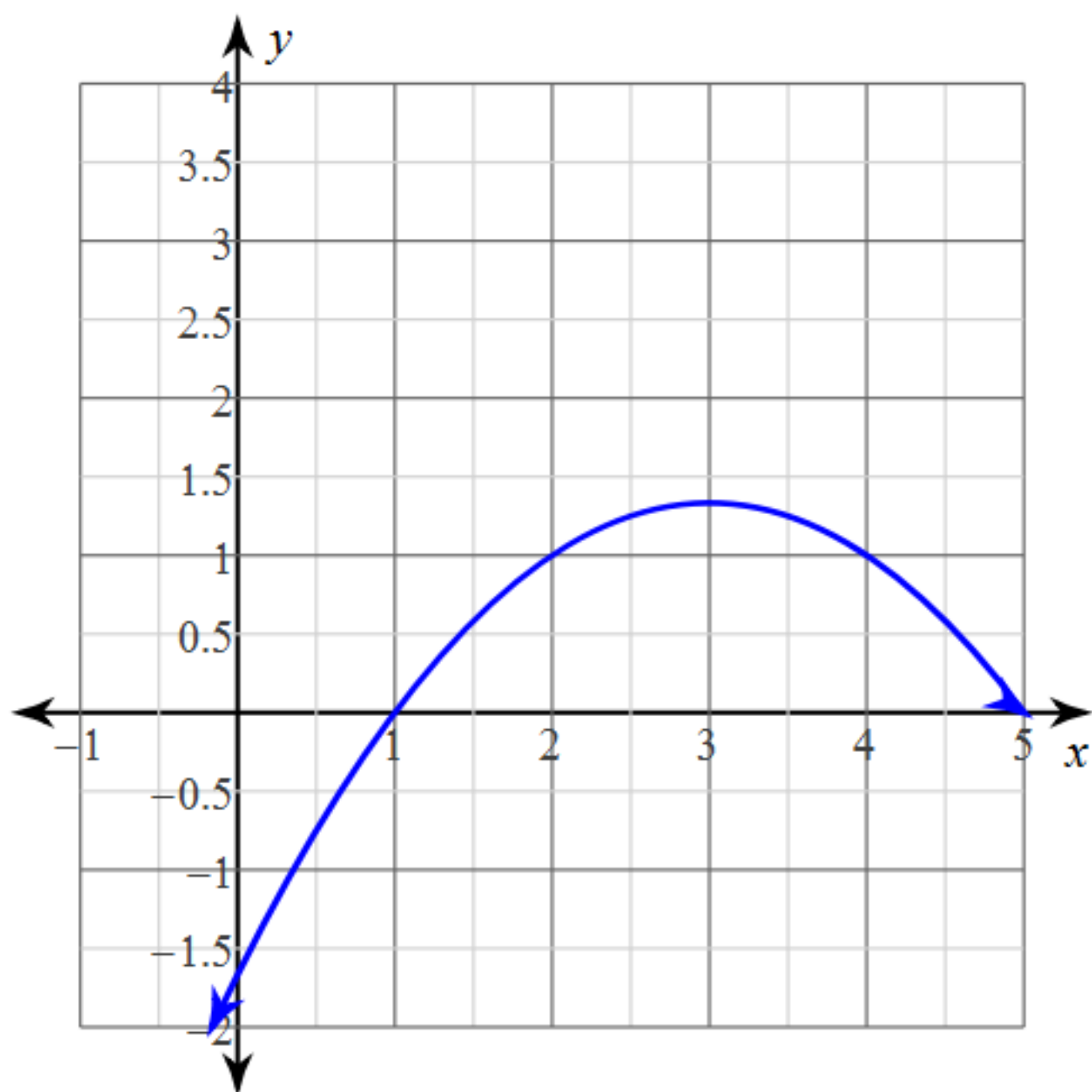
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1-up

Use the information provided to write the intercept form equation of each parabola.

1)

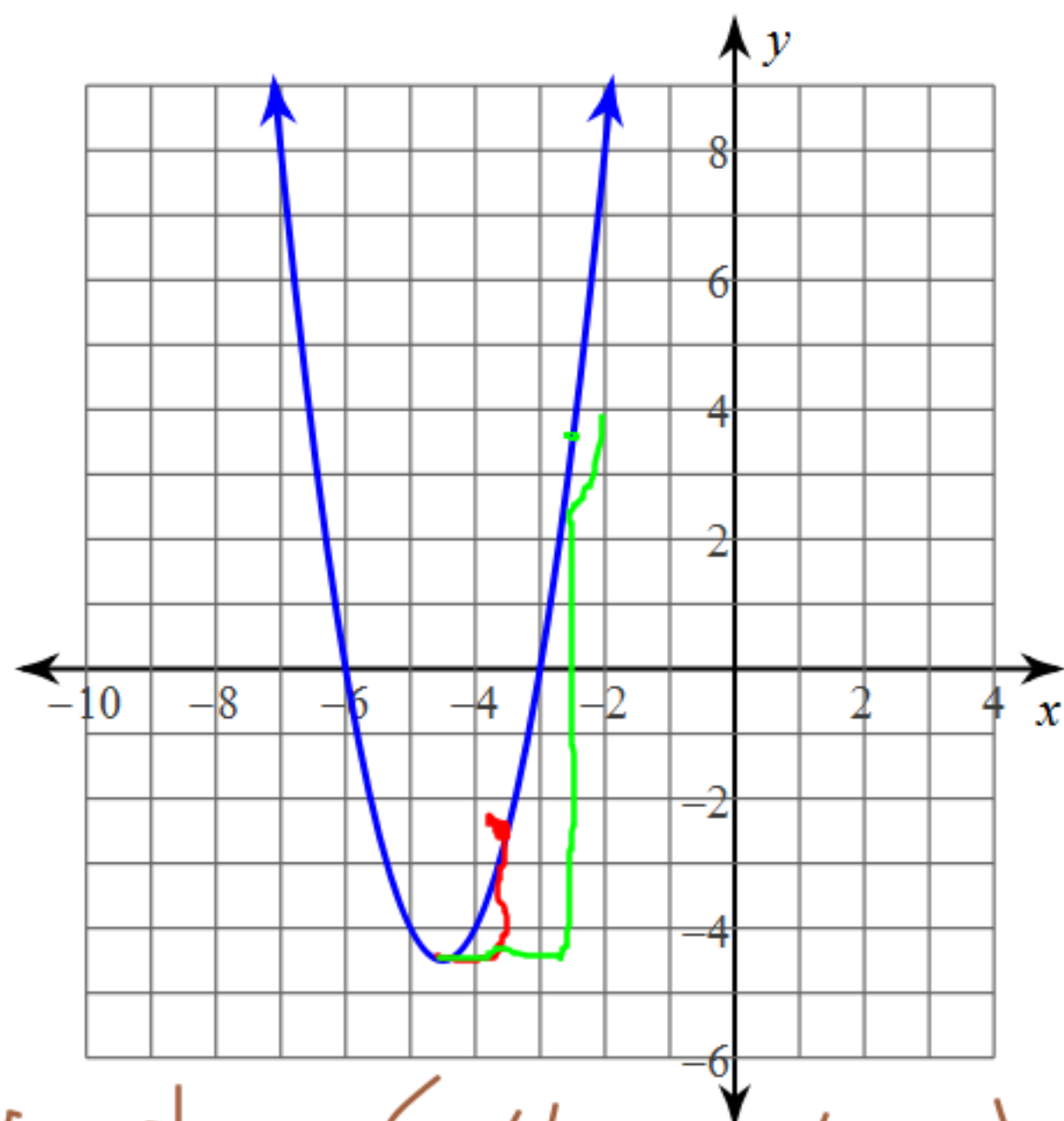


$$y = -\frac{1}{3}(x-1)(x-5)$$

SS 1, 5

Use the information provided to write the intercept form equation of each parabola.

2)



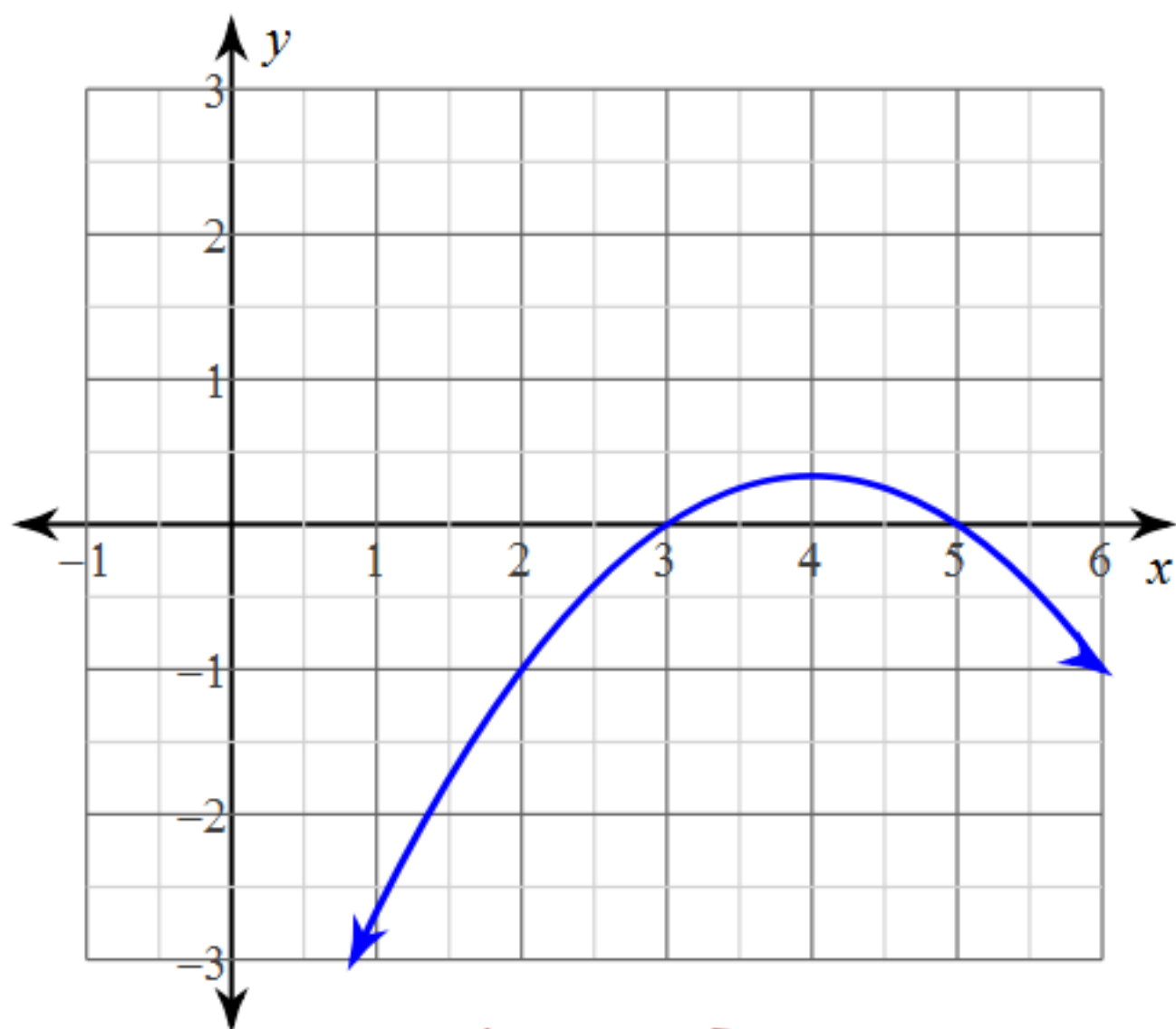
Vertex $(-4.5, -4.5)$
 SS $\{-6, -3\}$

$$\begin{aligned}
 y &= a(x+6)(x+3) \\
 -4.5 &= a(-4.5+6)(-4.5+3) \\
 -4.5 &= a(1.5)(-1.5) \\
 -4.5 &= -2.25a \\
 \frac{-4.5}{-2.25} &= \frac{-2.25a}{-2.25} \\
 2 &= a
 \end{aligned}$$

$$y = 2(x+6)(x+3)$$

Use the information provided to write the intercept form equation of each parabola.

4)



$$y = a(x - 5)(x - 3)$$
$$y = a(x - 3)(x - 5)$$
$$y = -\frac{1}{3}(x - 3)(x - 5)$$

Zeros $\{3, 5\}$
vertex $(4, 0.3)$

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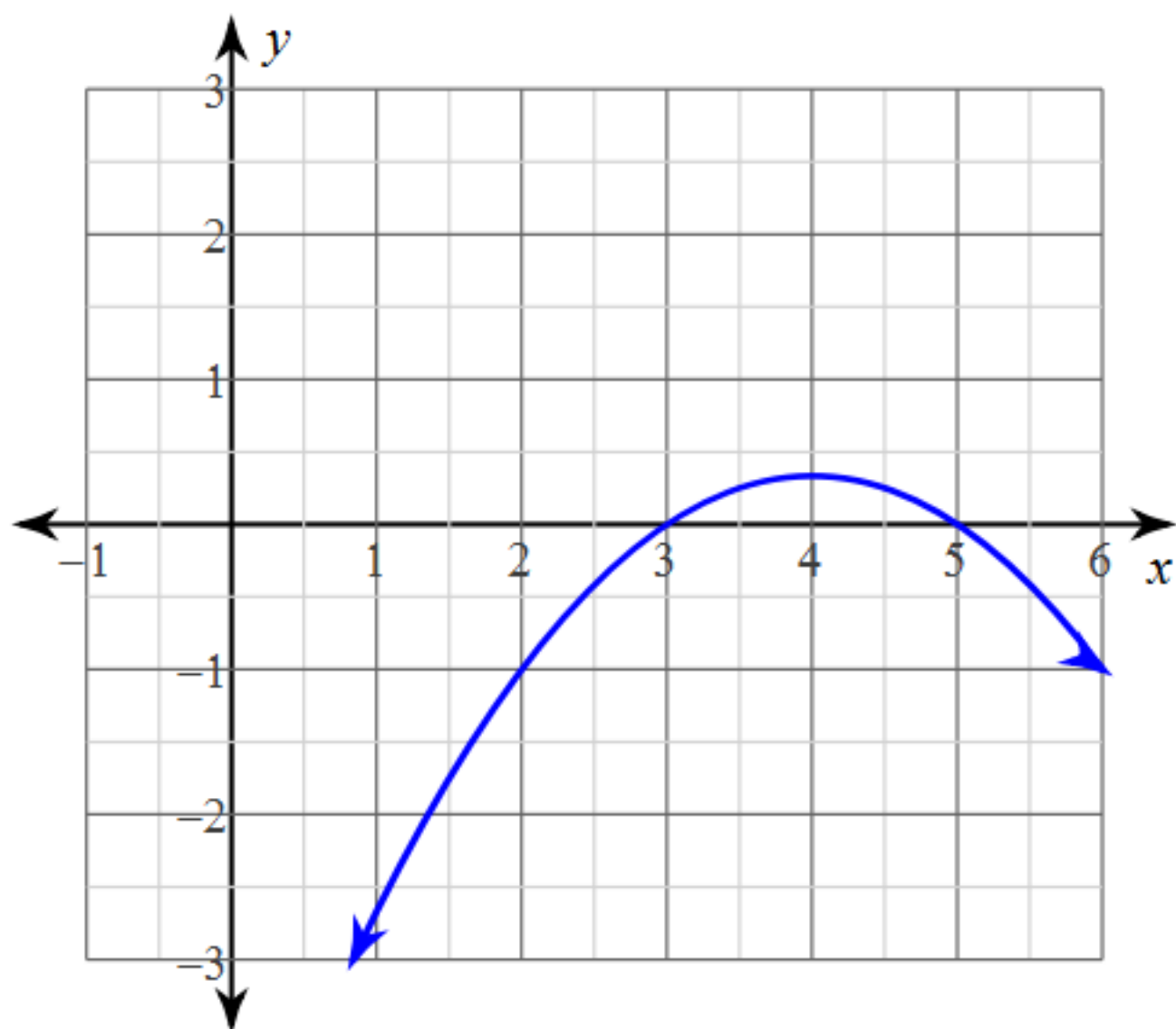
Jump



1-up

Use the information provided to write the intercept form equation of each parabola.

4)



$$y = -\frac{1}{3}(x - 5)(x - 3)$$

Glossary: Quadratic Functions

Definition and diagram for the following:

Parabola of $y = x^2$

Axis of symmetry

Vertex of a parabola

Zeros of a parabola

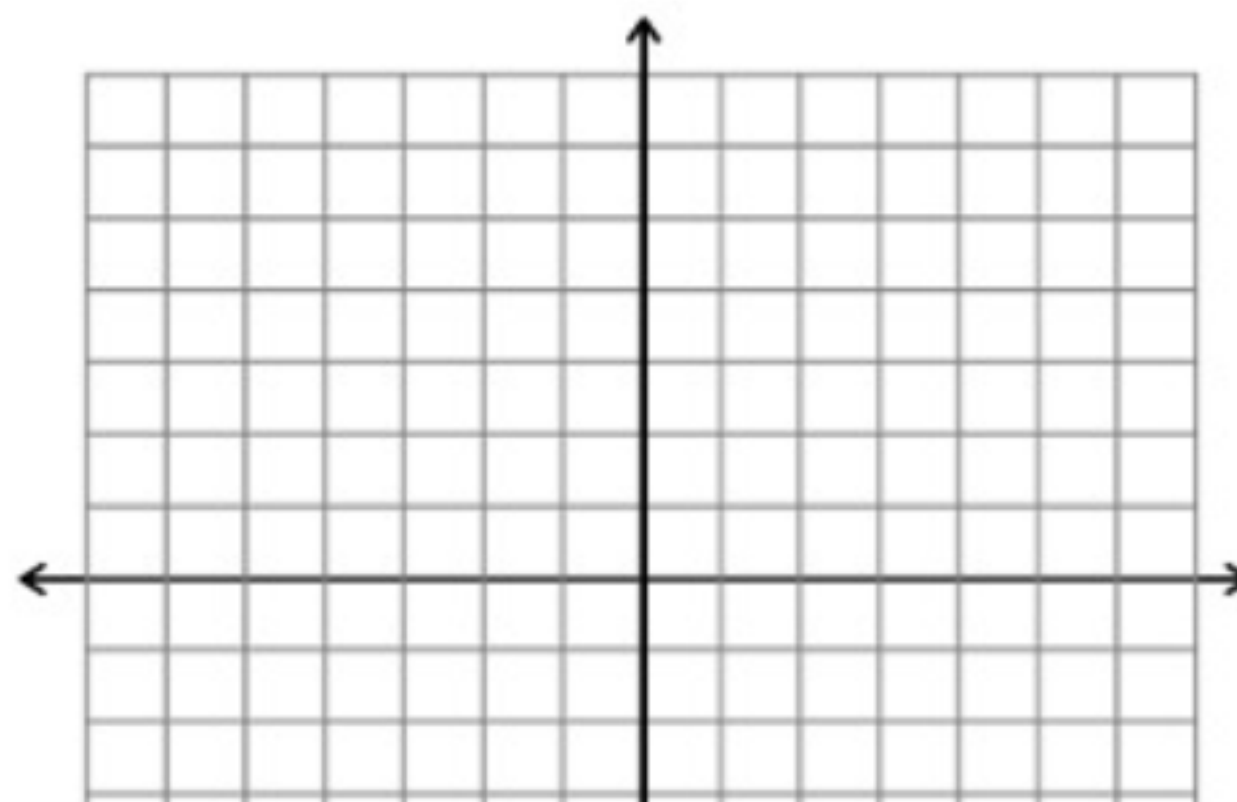
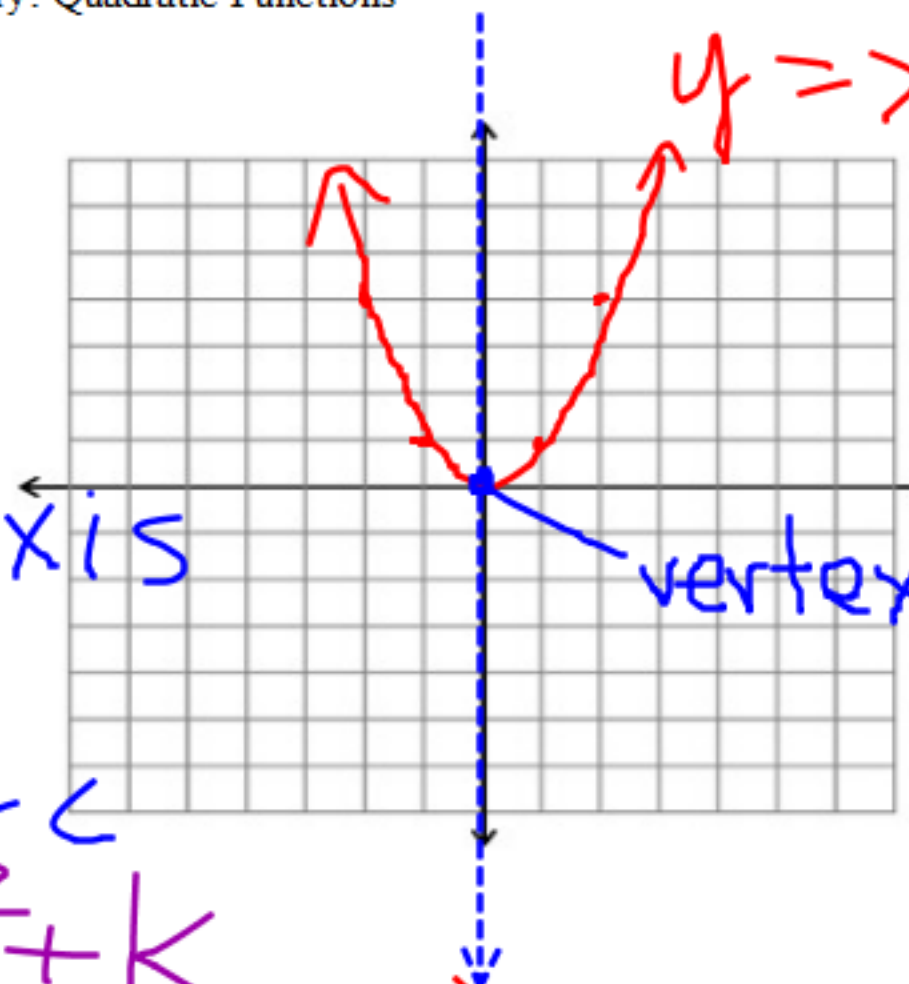
Y-intercept

Standard form of a Quadratic Equation

Vertex form of the Quadratic Equation

Zeros Form of the Quadratic Equation

Show and explain a stretch and a compression of the parabola's shape, a horizontal shift to the right or the left, a vertical shift up or down, opening upwards or downwards.



x	y
2	4
1	1
0	0
-1	1
-2	4

where it crosses x -axis

where it crosses the y -axis

$$y = ax^2 + bx + c$$

$$y = a(x-h)^2 + k$$

$$y = a(x-s)(x-t)$$

Zeros Form of the Quadratic Equation

A coordinate plane with a grid showing several quadratic functions. The functions are:

- $y = 2x^2$ (blue parabola, opening upwards)
- $y = x^2$ (red parabola, opening upwards)
- $y = \frac{1}{2}x^2$ (purple parabola, opening upwards)
- $y = -2x^2$ (black parabola, opening downwards)
- $y = -\frac{1}{2}x^2$ (green parabola, opening downwards)

$$y = 2x^2$$

x	y
2	8
1	2
0	0
-1	2
-2	8

twice as
skinny

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

x	y
3	4.5
2	2.5
1	0.5
0	0.5
-1	0.5
-2	2
-3	4.5

$$\downarrow y = -\frac{1}{2}x$$