

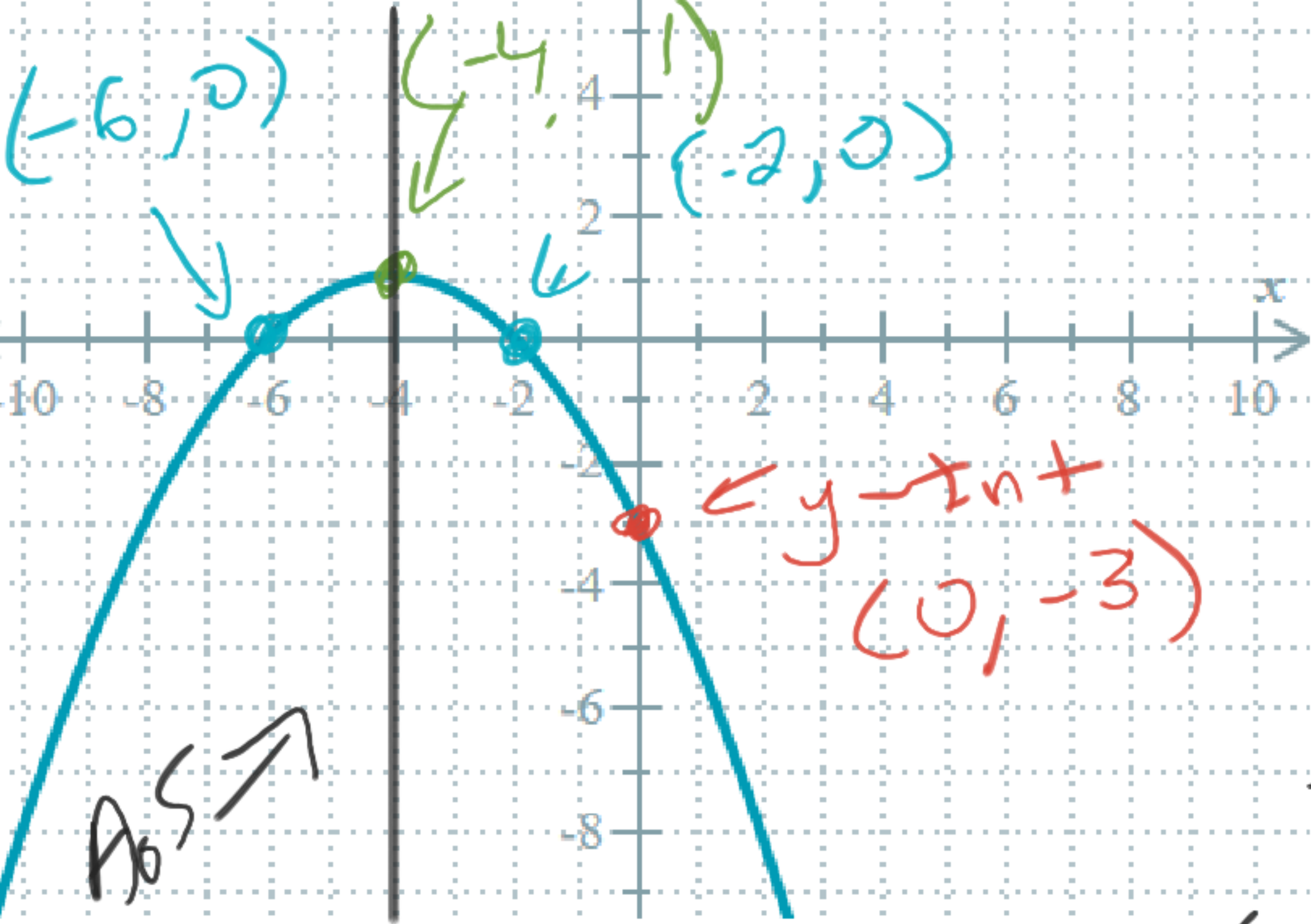
x-Int
 y-Int
 vertex
 Axis of symmetry

Axis
 Intercept
 vertex
 Standard

$$f(x) = a(x-m)(x-n)$$

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

$$f(x) = ax^2 + bx + c$$



$$h = -4 \quad k = 1$$

$$x = 0 \quad y = -3$$

$$-3 = a(0 - (-4))^2 + 1$$

$$-4 = a(16)$$

$$-1/4 = a$$

$$y = -1/4(x + 4)^2 + 1$$

As ↑
 Intercept
 vertex
 Standard

$$f(x) = a(x - m)(x - n)$$

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

$$f(x) = ax^2 + bx + c$$

$$x^2 + 5x + 6 = 0$$

 C^x

151

$$(x + 2)(x + 3) = 0$$

2

3

$$x^2 \boxed{+ 10} x \boxed{- 24}$$

-24

10

-2 12

$$(x + 12)(x - 2)$$

$$2x^2 + 3x - 2$$



-4

3

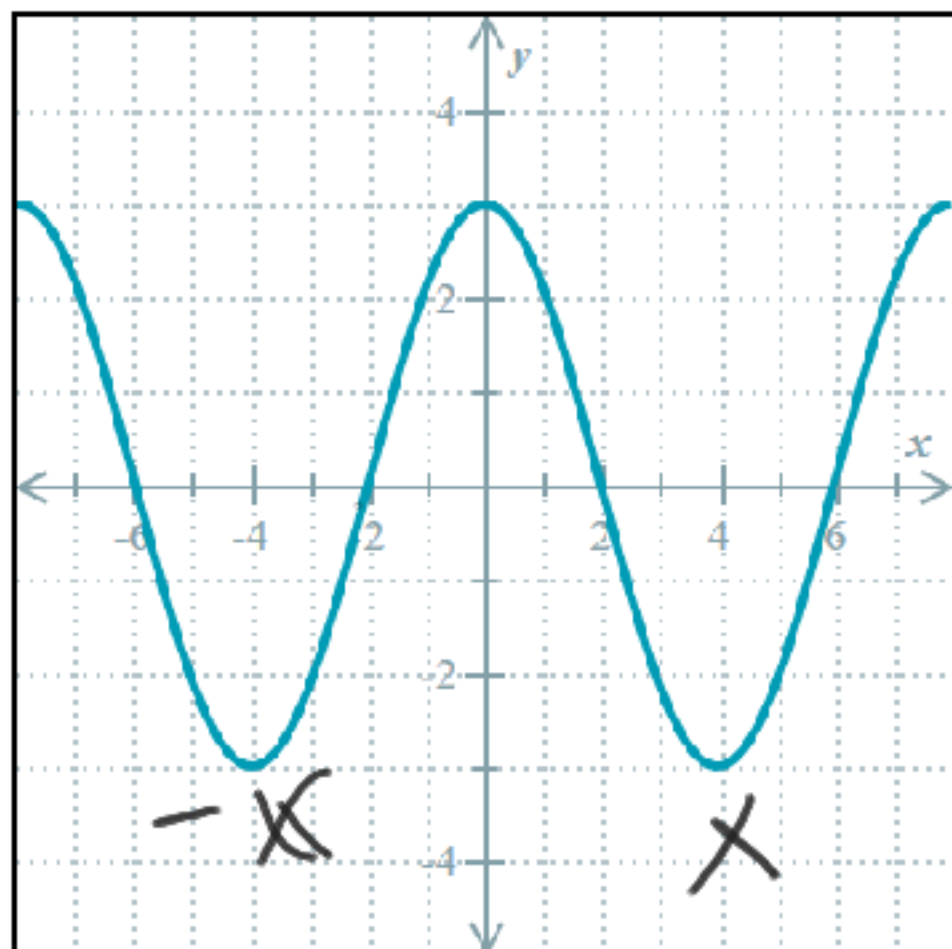
4 -1

$$2x^2 + 4x \left\{ -1x - 2 \right.$$

$$2x(x+2) \left\{ -1(x+2) \right.$$

$$(2x-1)(x+2)$$

Graph 1



Symmetry:

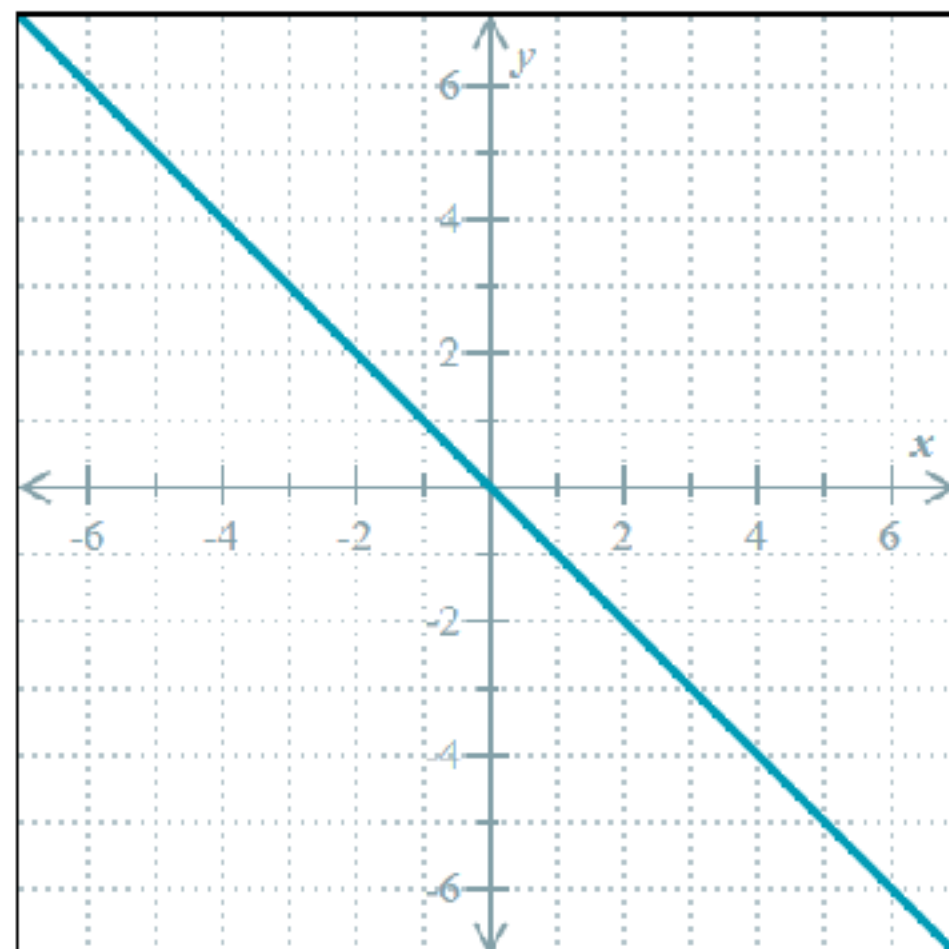
x -axis

y -axis

origin

none of these

Graph 2



Symmetry:

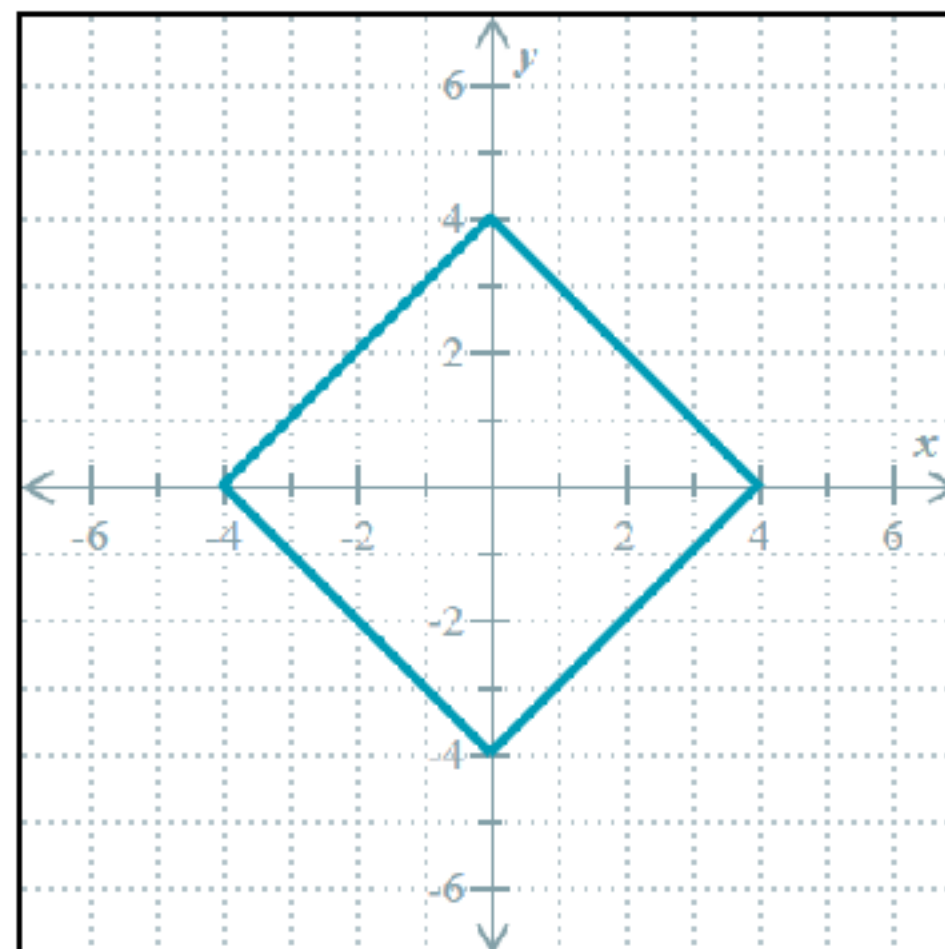
x -axis

y -axis

origin

none of these

Graph 3



Symmetry:

x -axis

y -axis

origin

none of these

(a) $x = y^2 + 10$ x -axis

(b) $5x^4 + 5y^4 = 60$

y -axis $\rightarrow x \Rightarrow -x$

$-x = y^2 + 10$ even test:

$x = -y^2 - 10$

x -axis $y \rightarrow -y$

$x = (-y)^2 + 10$

$x = y^2 + 10$

symmetric
across x

origin

$x \rightarrow -x$

$y \rightarrow -y$

$-x = (-y)^2 + 10$

$-x = y^2 + 10$

$x = -y^2 - 10$

$$y = 5|x|$$

$$x = 0$$

x	y
-2	10
-1	5
0	0
1	5
2	10

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

x	y
-2	4
-1	1/2
0	0
2	-4
4	-32
1	-1/2

$$y = (x + 2)^2 + 5$$

$$x = -2$$

x	y
-4	9
-3	6
-2	5
-1	6
0	9

$$f(x) = \sqrt{x-1}$$

$$x=1$$

x	y
1	0
2	1
3	$\sqrt{2}$
4	$\sqrt{3}$

x	y
1	0
2	1
5	2
10	3

$$f(x) = 5x^2 - 1 \quad \text{down by } 7$$

$$\begin{aligned} f(x) - 7 &= 5x^2 - 1 - 7 \\ &= 5x^2 - 8 \end{aligned}$$

$$f(x+3) = 5(x+3)^2 - 1 \quad \text{Left by } 3$$

$$\begin{aligned} f(x+3) - 7 &= 5(x+3)^2 - 1 - 7 \\ &= 5(x+3)^2 - 8 \end{aligned}$$