

~~FFC 2.4 PRACTICE~~ Quadratic Functions Key Features Practice

≠ 1

Day 1: Find the x-intercepts. Write your answer as ordered pairs. Graph the x-intercepts.

Day 2: Find the line of symmetry. Write your answer as an equation. Graph the LOS as a dashed line.

Use the LOS to find the vertex. Write the vertex as an ordered pair.

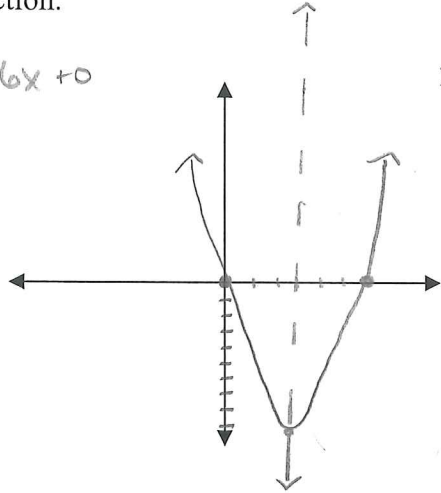
As yourself, will the vertex be a maximum or minimum? Doe that make sense?

Day 3: Find the coordinate of the y-intercept.

Graph the function.

1.  $y = x(x - 6)$   $x^2 - 6x + 0$

$$\begin{array}{l} X=0 \quad X-6=0 \\ \quad \quad \quad \cancel{+6} + 6 \\ \quad \quad \quad X=6 \end{array}$$



x-int's:  $(0,0)$   $(6,0)$

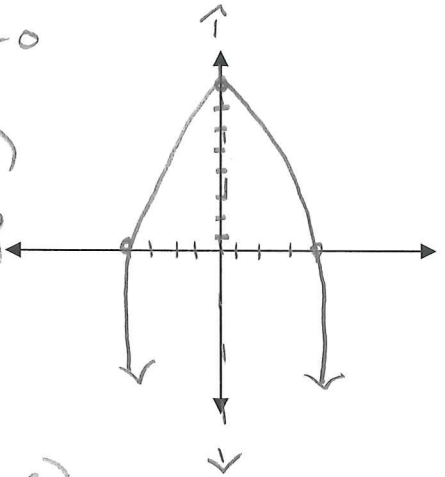
axis:  $x = 3$

vertex:  $(3, -9)$  min

y-int:  $(0,0)$

2.  $y = -x^2 + 16$   $+ 0$

$$\begin{array}{l} -(x^2 - 16) \\ -(x+4)(x-4) \\ X+4=0 \quad X-4=0 \\ \quad \quad \quad \cancel{-4} - 4 \quad \quad \quad \cancel{+4} + 4 \\ \quad \quad \quad X = -4 \quad X = 4 \end{array}$$



x-int's:  $(-4,0)$   $(4,0)$

axis:  $x = 0$

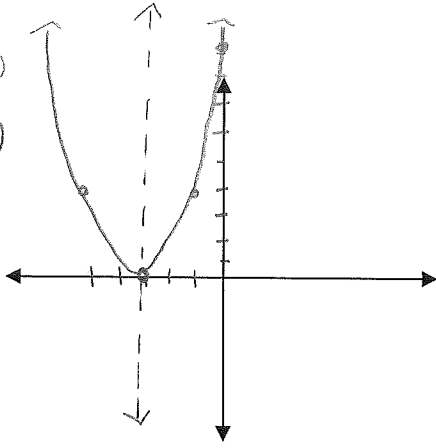
vertex:  $(0, 16)$  max

y-int:  $(0, 16)$

3.  $y = x^2 + 6x + 9$

$(x + 3)(x + 3)$

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



x-int's:  $(-3, 0)$

axis:  $x = -3$

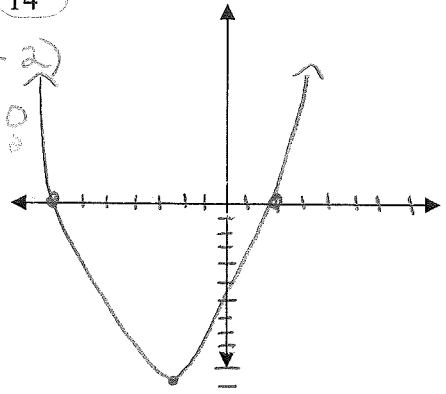
vertex:  $(-3, 0)$  min

y-int:  $(0, 9)$

4.  $y = x^2 + 5x - 14$

$(x + 7)(x - 2)$

$x + 7 = 0 \quad x - 2 = 0$   
 $-7 \quad -7 \quad +2 \quad 14$   
 $x = -7 \quad x = 2$



x-int's:  $(-7, 0)(2, 0)$

axis:  $x = -2.5$

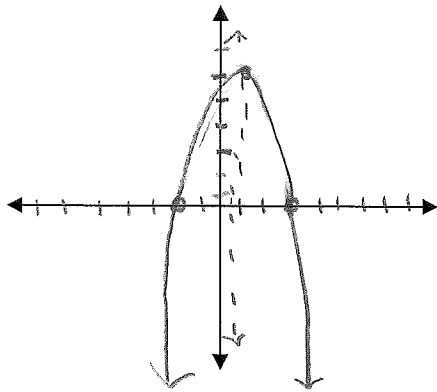
vertex:  $(-2.5, -20.25)$  min

y-int:  $(0, -14)$

5.  $y = -(x - 3)(x + 2) = -(x^2 - x - 6)$

$-x^2 + x + 6$

$x - 3 = 0 \quad x + 2 = 0$



x-int's:  $(3, 0)(-2, 0)$

axis:  $x = 1/2$

vertex:  $(1/2, 6.25)$  max

y-int:  $(0, 6)$