

# 10.2 Quadratics in Vertex Form

Name: \_\_\_\_\_

## Corrective Assignment

**Directions: Pick the best answer.**

1) Which of the following is true about the quadratic function  $f(x) = -(x - 4)^2 + 5$ .

- a) It has a max value at  $y = 5$ .
- b) It has a min value at  $y = 4$ .
- c) It has a max value at  $y = 4$ .
- d) It has a min value at  $y = 5$ .

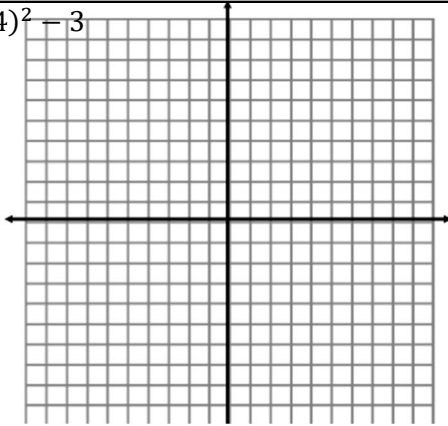
2) Which of the following is true about the quadratic function  $f(x) = 0.4(x - 4)^2 + 5$ .

- a) It is skinnier than its parent function and opens down.
- b) It is skinnier than its parent function and opens up.
- c) It is wider than its parent function and opens down.
- d) It is wider than its parent function and opens up.

**Directions: Graph each function. Then answer the questions. Plot the vertex and at least 2 other points, more if possible.**

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

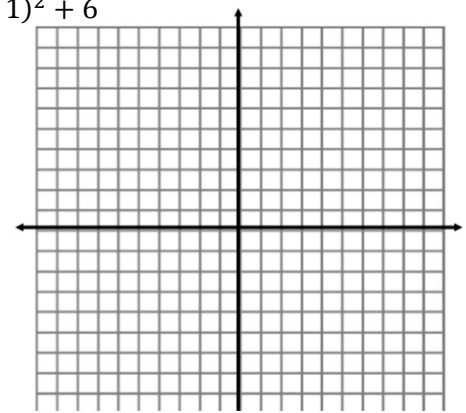
Standard form:



Y-int:

4)  $f(x) = -(x + 1)^2 + 6$

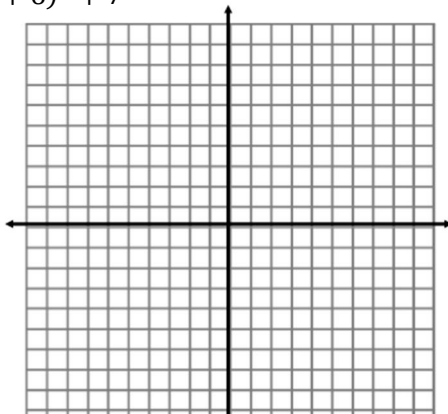
Standard form:



Y-int:

5)  $f(x) = -2(x + 6)^2 + 7$

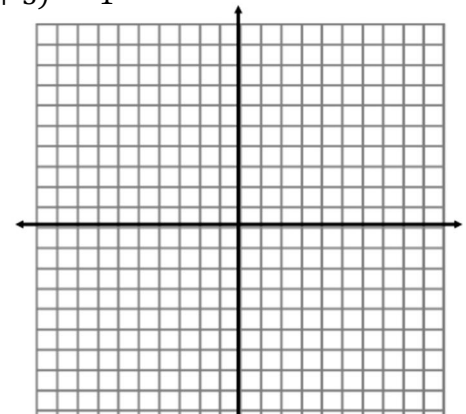
Standard form:



Y-int:

6)  $f(x) = 0.5(x + 3)^2 - 1$

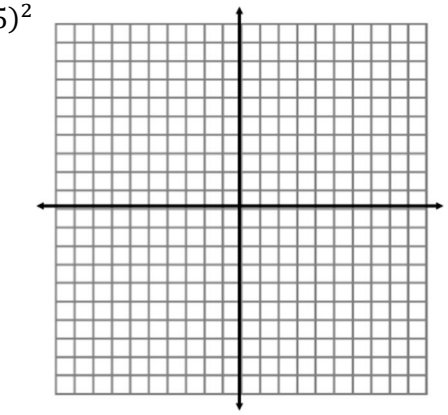
Standard form:



Y-int:

7)  $f(x) = (x - 5)^2$

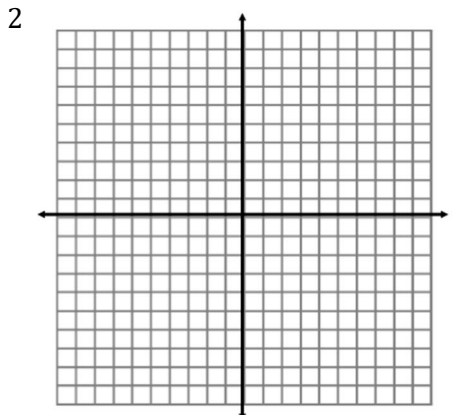
Standard form:



Y-int:

8)  $f(x) = -x^2 + 2$

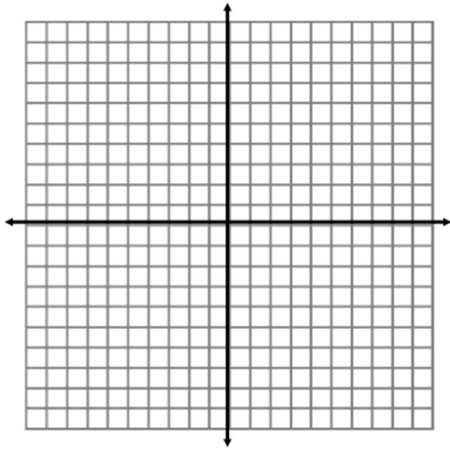
Standard form:



Y-int:

9)  $f(x) = 2(x + 6)^2 - 10$

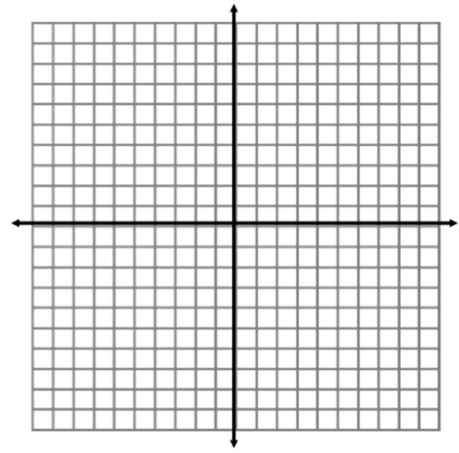
Standard form:



Y-int:

10)  $f(x) = -0.5(x + 6)^2 + 3$

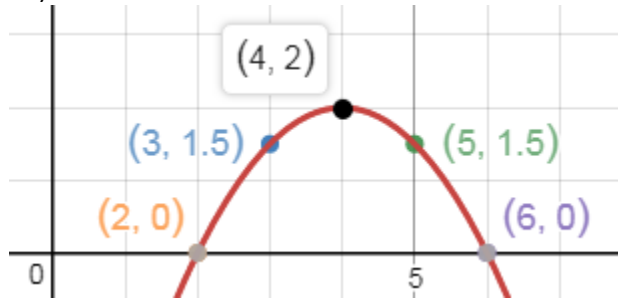
Standard form:



Y-int:

Directions: a) Write the equation of each function. b) Compare the graph to the given function.

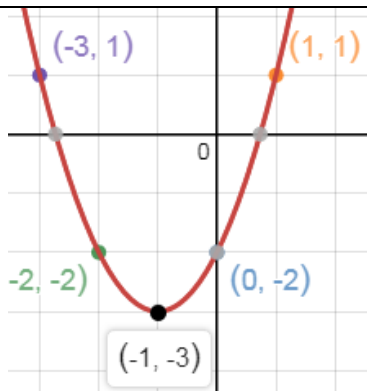
11)



a) What is the equation of the function?

b) Compare the graph to  $f(x) = (x - 4)^2 + 2$

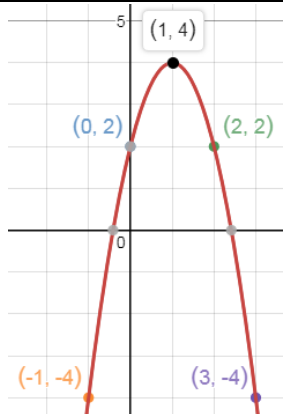
12)



a) What is the equation of the function?

b) Compare the graph to  $f(x) = 2(x + 1)^2$

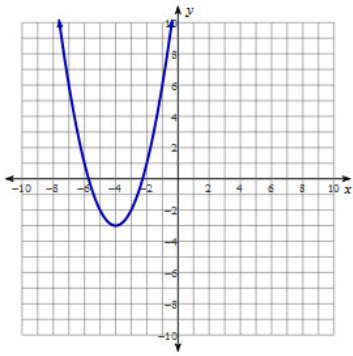
13)



a) What is the equation of the function?

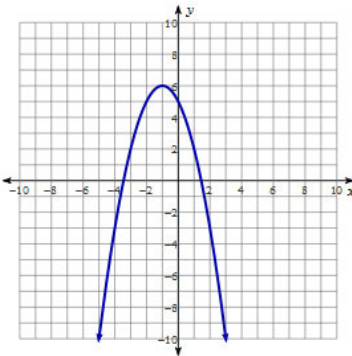
b) Compare the graph to  $f(x) = -(x - 1)^2 + 2$

1) A      2) D



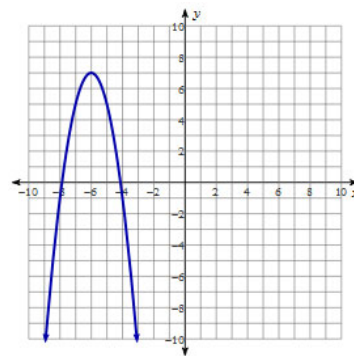
3)

$$f(x) = x^2 + 8x + 13; (0, 13)$$



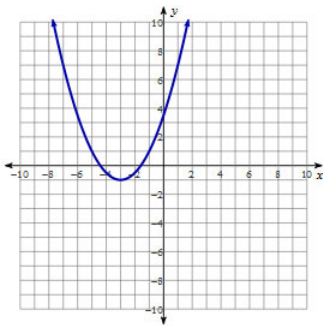
4)

$$f(x) = -x^2 - 2x + 5; (0, 5)$$



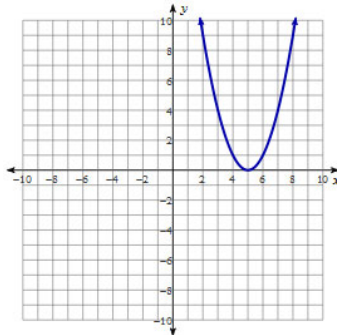
5)

$$f(x) = -2x^2 - 24x - 65; (0, -65)$$



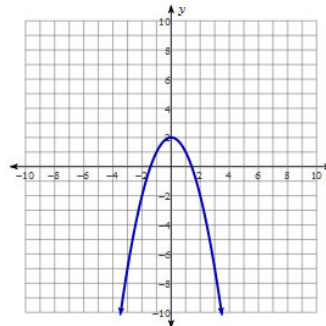
6)

$$f(x) = 0.5x^2 + 3x + 3.5; (0, 3.5)$$



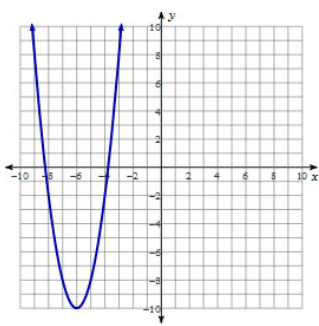
7)

$$f(x) = x^2 - 10x + 25; (0, 25)$$



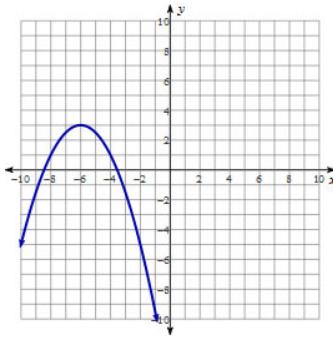
8)

$$f(x) = -x^2 + 2; (0, 2)$$



9)

$$f(x) = 2x^2 + 24x + 62; (0, 62)$$



10)

$$f(x) = -0.5x^2 - 6x - 15; (0, -15)$$

11) a)  $f(x) = -0.5(x - 4)^2 + 2$  b) The graph is WIDER than the given function and opens down as opposed to the function opening up. The graph has a max value while the given function has a minimum value.

12) a)  $f(x) = (x + 1)^2 - 3$  b) The graph has the same vertex as the given function but it is narrower than the given function.

13) a)  $f(x) = -2(x - 1)^2 + 4$  b) The graph and the given function both open down but the graph is narrower than the given function and has a higher maximum value.