

Student: _____
Date: _____

Instructor: Deb Wertz
Course: MAP102 Master (Custom ISBN)

Assignment: Homework #30

1. Find the vertex of the graph of the following quadratic function.

$$f(x) = x^2 - 8x + 3$$

The vertex is _____.
(Type an ordered pair.)

2. Find the vertex of the graph of the following quadratic function.

$$f(x) = -x^2 - 8x + 7$$

The vertex is _____. (Type an ordered pair.)

3. Find the vertex of the graph of the following quadratic function.

$$f(x) = -4x^2 - 8x + 2$$

The vertex is _____.
(Type an ordered pair.)

4. Find the vertex of the graph of the quadratic function. Determine whether the graph opens upward or downward, find any intercepts, and sketch the graph.

$$f(x) = x^2 + 8x + 7$$

The vertex is _____.
(Simplify your answer. Type an ordered pair.)

Does the graph open upward or downward?

- The parabola opens upward.
 The parabola opens downward.

Find any x-intercepts of the graph.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

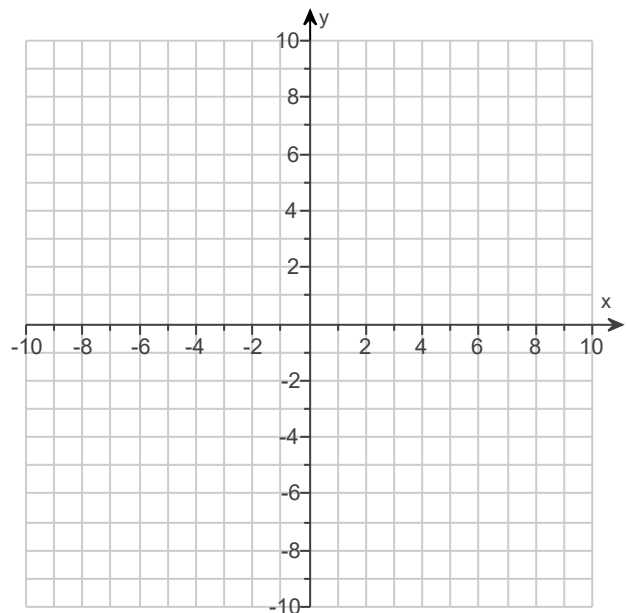
- A.** The x-intercept(s) is(are) _____.
(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)
- B.** There is no x-intercept.

Find any y-intercepts of the graph.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.** The y-intercept(s) is(are) _____.
(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)
- B.** There is no y-intercept.

Use the graphing tool to graph the function.



5. Find the vertex of the graph of the quadratic function. Determine whether the graph opens upward or downward, find any intercepts, and sketch the graph.

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

The vertex is _____.
(Simplify your answer. Type an ordered pair.)

Does the graph open upward or downward?

- The parabola opens downward.
 The parabola opens upward.

Find any x-intercepts of the graph.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

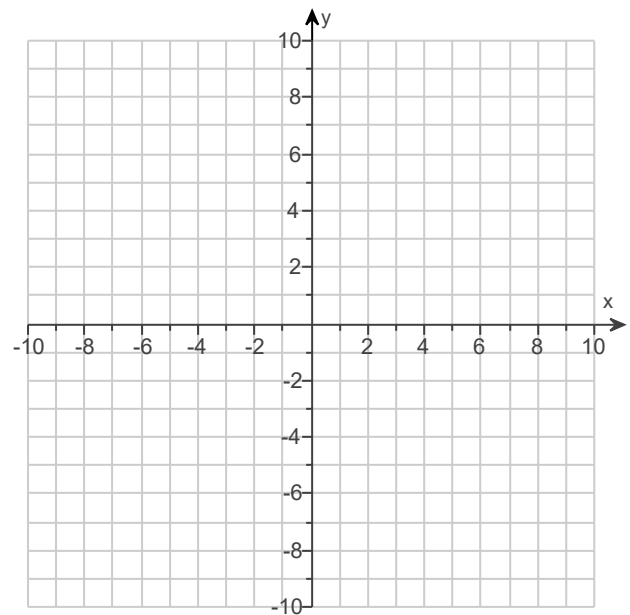
- A.** The x-intercept(s) is(are) _____.
(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)
 B. There is no x-intercept.

Find any y-intercepts of the graph.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A.** The y-intercept(s) is(are) _____.
(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)
 B. There is no y-intercept.

Use the graphing tool to graph the function.



6. Find the vertex of the graph of the quadratic function shown below. Determine whether the graph opens upward or downward, find any intercepts, and sketch the graph.

$$f(x) = -25x^2 + 20x - 3$$

The vertex is _____.

(Simplify your answer. Type an ordered pair.)

Does the graph open upward or downward?

- The parabola opens upward.
 The parabola opens downward.

Find any x-intercepts of the graph. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

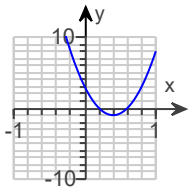
- A.** The x-intercept(s) is(are) _____.
(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)
 B. There is no x-intercept.

Find any y-intercepts of the graph. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

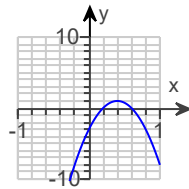
- A.** The y-intercept(s) is(are) _____.
(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)
 B. There is no y-intercept.

Choose the correct graph below.

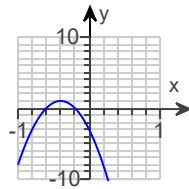
A.



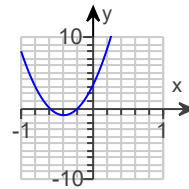
B.



C.



D.



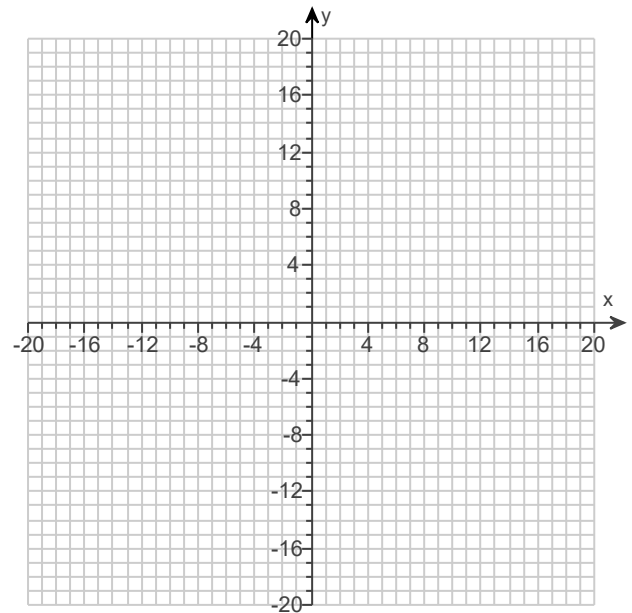
7. Sketch the graph of the quadratic function and the axis of symmetry. State the vertex, and give the equation for the axis of symmetry.

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

Use the graphing tool to graph the function as a solid curve and the axis of symmetry as a dashed line.

The vertex is _____.
(Type an ordered pair.)

The axis of symmetry is _____.
(Type an equation.)



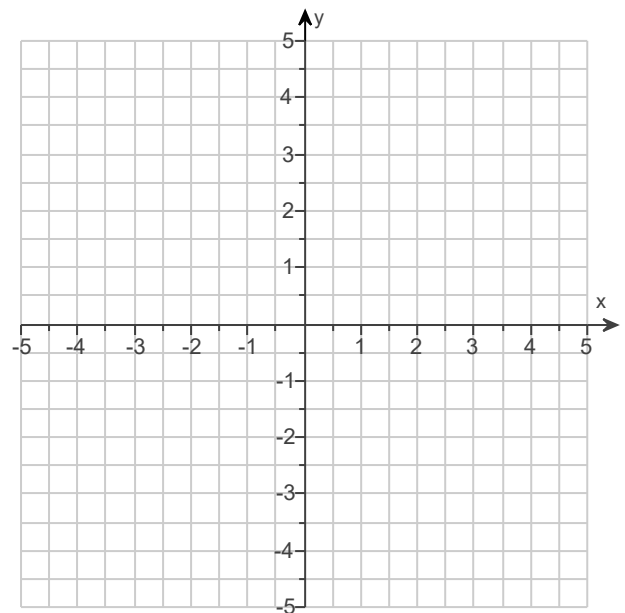
8. Sketch the graph of the quadratic function and the axis of symmetry. State the vertex, and give the equation for the axis of symmetry.

$$F(x) = \left(x + \frac{1}{2}\right)^2 - 2$$

Use the graphing tool to graph the function as a solid curve and the axis of symmetry as a dashed line.

The vertex is _____.
(Type an ordered pair.)

The axis of symmetry is _____.
(Type an equation.)



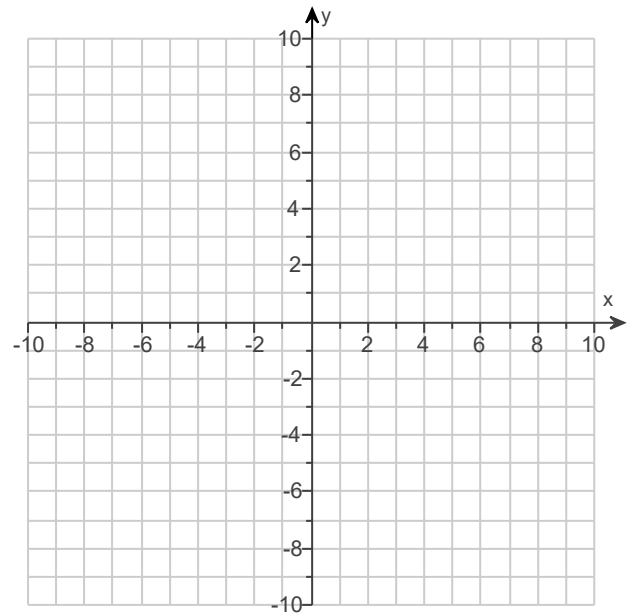
9. Sketch the graph of the quadratic function and the axis of symmetry. State the vertex, and give the equation for the axis of symmetry.

$$F(x) = \frac{3}{2}(x + 3)^2 + 2$$

Use the graphing tool to graph the function as a solid curve and the axis of symmetry as a dashed line.

The vertex is _____.
(Type an ordered pair.)

The axis of symmetry is _____.
(Type an equation.)



10. State the vertex of the graph of the quadratic function.

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

The vertex is _____. (Type an ordered pair.)

1. $(4, -13)$

2. $(-4, 23)$

3. $(-1, 6)$

4. $(-4, -9)$

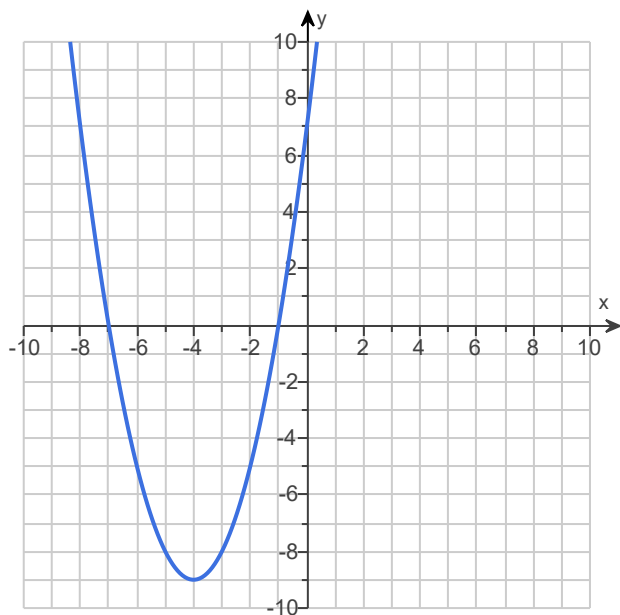
The parabola opens upward.

A. The x-intercept(s) is(are) $(-7, 0), (-1, 0)$.

(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)

A. The y-intercept(s) is(are) $(0, 7)$.

(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)



5. (3,4)

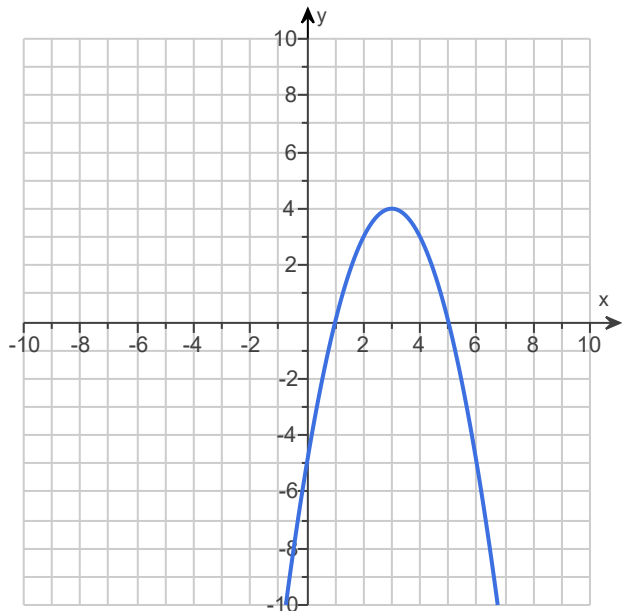
The parabola opens downward.

A. The x-intercept(s) is(are) (1,0),(5,0).

(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)

A. The y-intercept(s) is(are) (0, -5).

(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)



6. $\left(\frac{2}{5}, 1\right)$

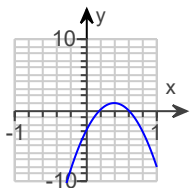
The parabola opens downward.

A. The x-intercept(s) is(are) $\left(\frac{1}{5}, 0\right), \left(\frac{3}{5}, 0\right)$.

(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)

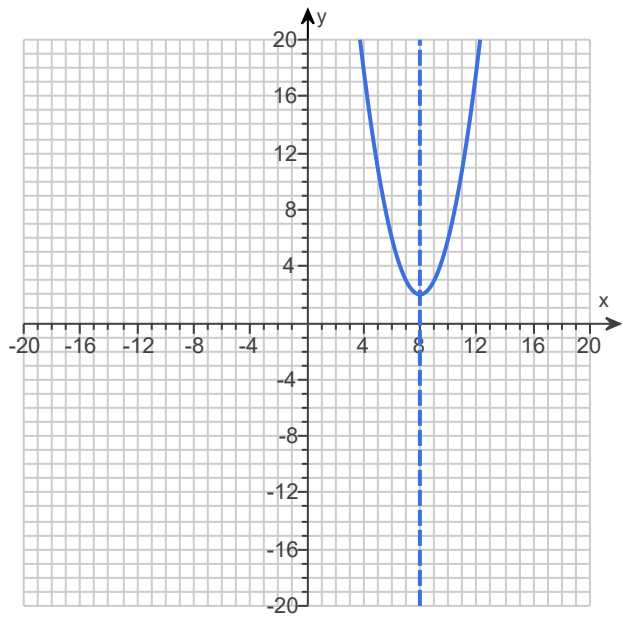
A. The y-intercept(s) is(are) (0, -3).

(Simplify your answer. Type an ordered pair. Use a comma to separate answers as needed.)



B.

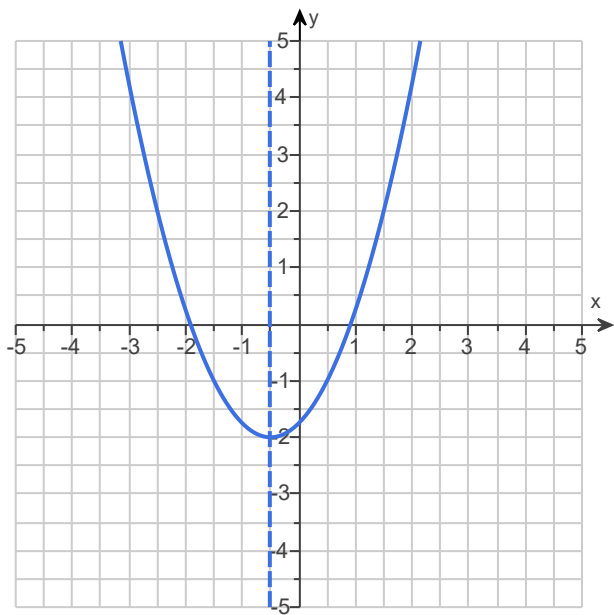
7.



(8,2)

$x = 8$

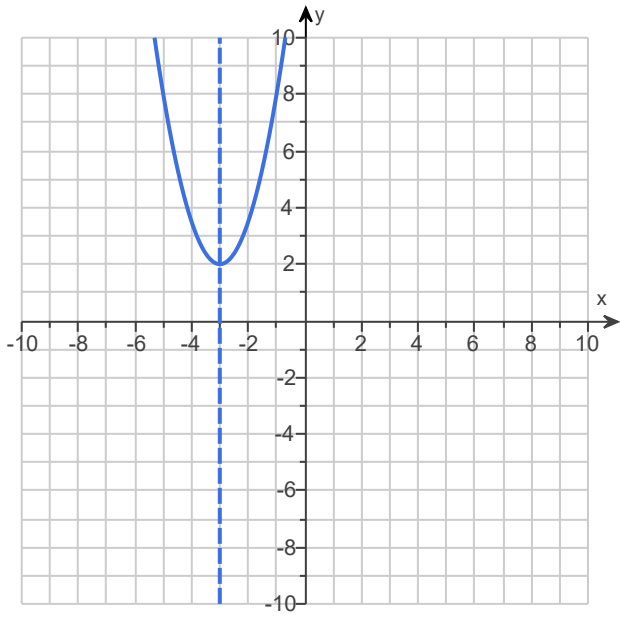
8.



$\left(-\frac{1}{2}, -2\right)$

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

9.



$(-3, 2)$

$x = -3$

10. $(0, 6)$
