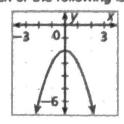
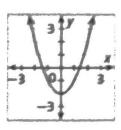
Learning Target #1: Transformations and Characteristics of Quadratic Functions

1. Which of the following is the graph of $f(x) = -x^2 + 2$.

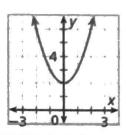
(a)



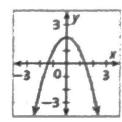
(b)



(c)



(d)



- 2. How would you shift the parent function $y = x^2$ to the graph of $y = (x + 4)^2 + 5$
 - (a) The parent function would shift 4 units left and 5 units down.
 - (b) The parent function would shift 4 units right and 5 units up.
 - (c) The parent function would shift 4 units left and 5 units up.
 - (d) The parent function would shift 5 units right and 4 units down.
- 3. The parent function, $f(x) = x^2$, is reflected across the x-axis, stretched by a factor of 3, and shifted right 10 units and up 4 units to create g(x). Use the description to write the quadratic function in vertex form.

(a)
$$g(x) = 3(x + 10)^2 + 4$$

(b)
$$g(x) = -3(x-10)^2 +4$$

(c)
$$g(x) = 3(x - 10)^2 + 4$$

(d)
$$g(x) = -3(x-4)^2 + 10$$

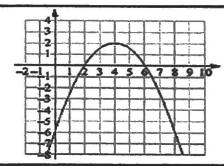
4. What is the range of the function to the right?



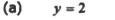
_(c)
$$y \ge 2$$

(b)
$$y \le 4$$

_(d) All real numbers



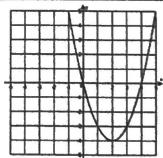
5. What is the axis of symmetry of the function to the right?



(c)
$$y = -4$$

$$(b) x=2$$

$$(d) x = -4$$



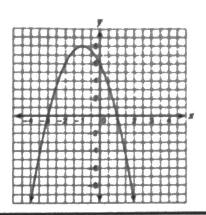
The graph of a quadratic equation is shown on the right. What are the zeroes of the equation?

(a)
$$x = -3$$
 only

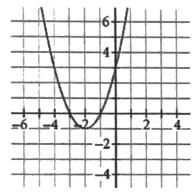
(c)
$$x = 1$$
 only

(b)
$$x = -3$$
 and $x = 1$

(d)
$$x = 3$$
 and $x = -1$



Which of the following is NOT true of the graph of the function below?



- (a) Its vertex is at (-2, -1).
- (b) Its y-intercept is at (0, 3).
- (c) Its x-intercepts are (-3, 0) and (-1, 0).
- (d) Its minimum value is y = -2.

Describe the extrema for the quadratic equation: $y = -x^2 - 6x - 10$. Minimum or Maximum?

(a) Minimum

(b) Maximum

From Question #13, describe the value of the extrema for the quadratic equation: $y = -x^2 - 6x - 10$

(a) Maximum at y = -1

(b) Maximum at x = -1

(c) Maximum at y = -19

(d) Maximum at x = -19