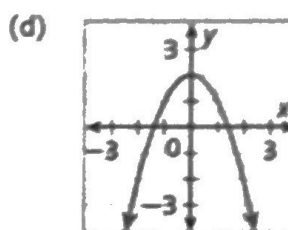
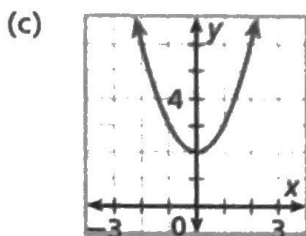
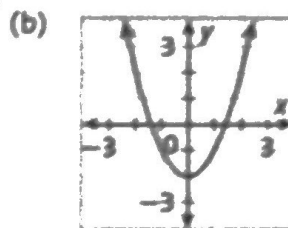
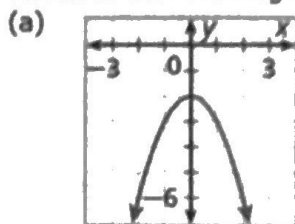


## Learning Target #1: Transformations and Characteristics of Quadratic Functions

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



2. How would you shift the parent function  $y = x^2$  to the graph of  $y = (x + 4)^2 + 5$

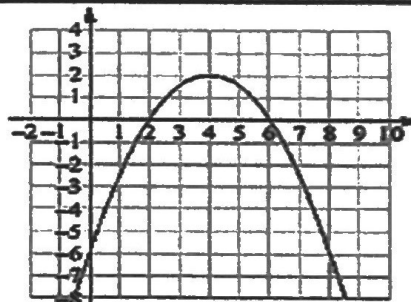
- (a) The parent function would shift 4 units left and 5 units down.  
 (b) The parent function would shift 4 units right and 5 units up.  
 (c) The parent function would shift 4 units left and 5 units up.  
 (d) The parent function would shift 5 units right and 4 units down.

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?

- (a)  $y \leq 2$                       (c)  $y \geq 2$   
 (b)  $y \leq 4$                       (d) All real numbers



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

- (a)  $y = 2$                       (c)  $y = -4$   
 (b)  $x = 2$                       (d)  $x = -4$

