

**Vertex Form of a Function**  

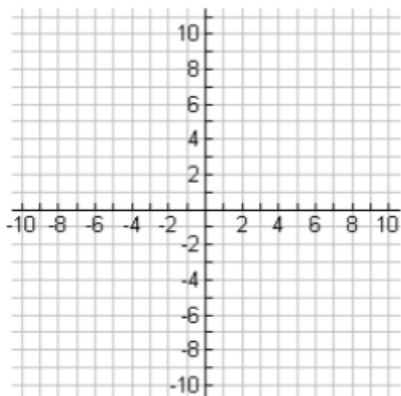
$$y = a \cdot f(x - h) + k$$

1. Describe how the parameter “a” affects the graphs of the parent functions.
  
2. Describe how the parameter “h” affects the graphs of the parent functions.
  
3. Describe how the parameter “k” affects the graphs of the parent functions.
  
4. For the functions below, state the parent function and list all transformations.

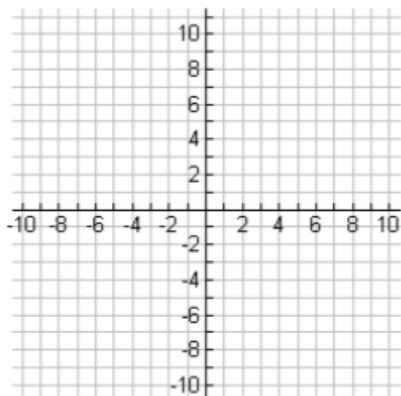
Function	Parent Function	Transformations
$f(x) = (x + 2)^2 - 4$		
$g(x) = 3 \cdot  x - 4  + 1$		
$p(x) = -(x + 3)^3$		
$h(x) = -2 \cdot \sqrt{x - 1}$		
$f(x) = -4(x - 1)^2 + 3$		
$h(x) = -\frac{1}{3} \cdot  x - 5  - 2$		

5. Graph the equations from question 4 (and their parent functions) on the axes below.

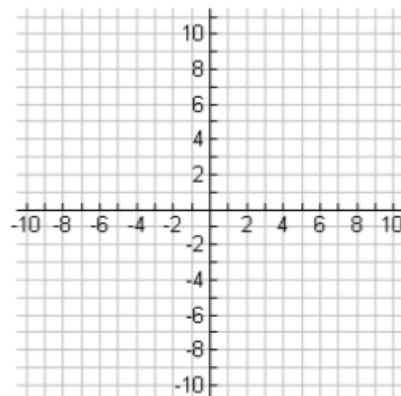
$$f(x) = (x + 2)^2 - 4$$



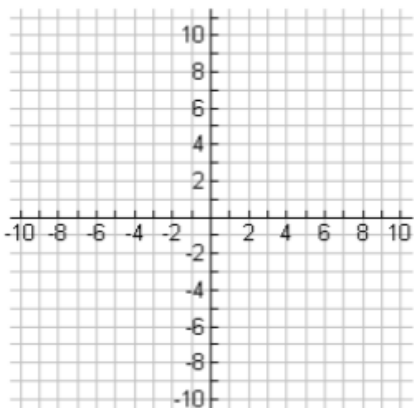
$$g(x) = 3 \cdot |x - 4| + 1$$



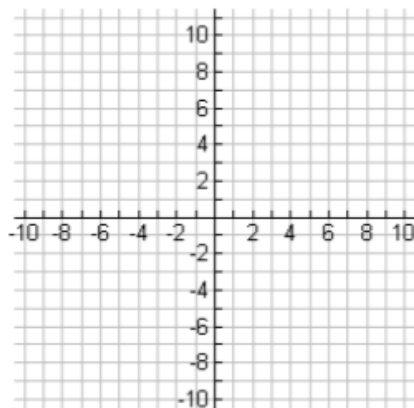
$$p(x) = -(x + 3)^3$$



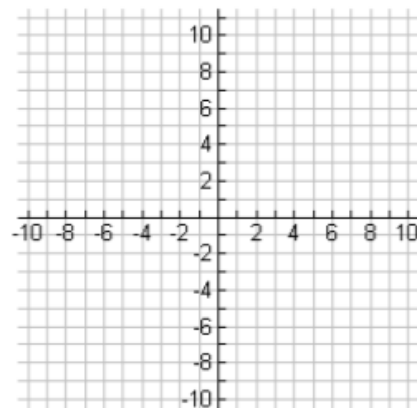
$$h(x) = -2 \cdot \sqrt{x - 1}$$



$$f(x) = -4(x - 1)^2 + 3$$



$$h(x) = -\frac{1}{3} \cdot |x - 5| - 2$$



Match the equations below with their corresponding graph.

6.  $y = 2|x - 3| + 4$  \_\_\_\_\_

9.  $y = \frac{1}{2}|x + 3| - 4$  \_\_\_\_\_

7.  $y = 2|x - 3| - 4$  \_\_\_\_\_

10.  $y = -\frac{1}{2}|x + 3| - 4$  \_\_\_\_\_

8.  $y = 2|x + 3| - 4$  \_\_\_\_\_

11.  $y = \frac{1}{2}|x + 3| + 4$  \_\_\_\_\_

