

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

Date: \_\_\_\_\_

**11.1 HOMEWORK: Translations (Vertical and Horizontal Shifts)**

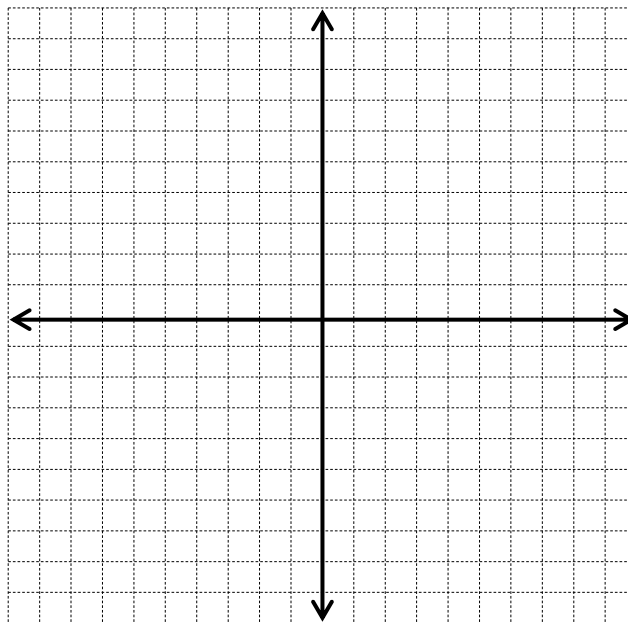
Algebra 1

1. Working with absolute value functions.

a. The vertex of the parent absolute value function  $f(x) = |x|$  is at  $(0, 0)$ , which is its minimum. Based on your work in this lesson, what do you predict the vertex will be for the graphs of  $g(x) = |x| - 3$  and  $h(x) = |x - 3|$ ?

b. Create a table of values and graph all three functions. Label the vertex of each to verify your prediction.

$f(x) =  x $	$g(x) =  x  - 3$	$h(x) =  x - 3 $
--------------	------------------	------------------



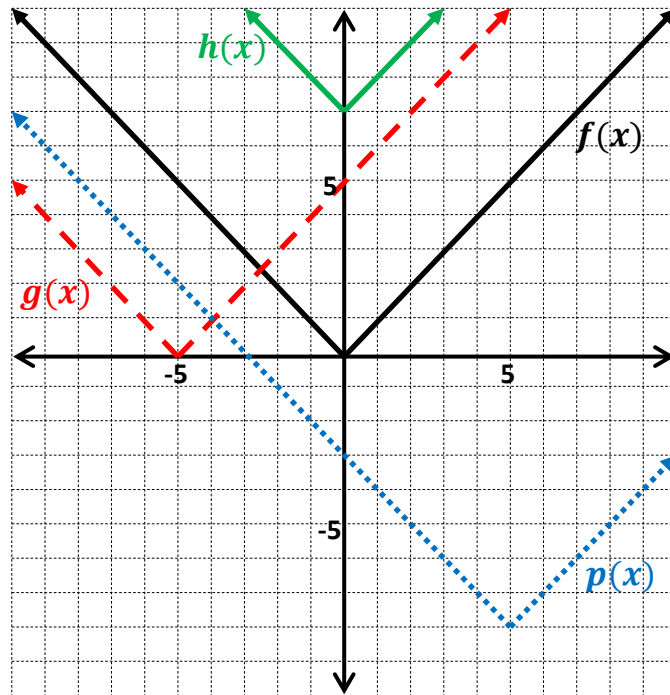
2. Write the equations that best represent the graphs below.

a.  $f(x) = |x|$

b.  $g(x) =$

c.  $h(x) =$

d.  $p(x) =$



3. Let  $f(x) = |x - 4|$  for every real number  $x$ . The graph of  $f(x)$  is provided on the Cartesian plane below. Transformations of the graph of  $y = f(x)$  are described below. After reading each description, graph the new function and write its equation. **Keep in mind you are not starting with the parent function!**

a. Translate  $f(x)$  left 6 units and down 2 units.

$g(x) =$

b. Translate  $g(x)$  from part (a) right 3 units and up 2 units.

$h(x) =$

