Name _____ Date _____ Class _____

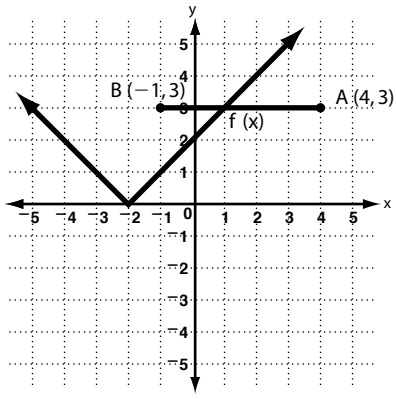
LESSON 1-8

Practice A

Exploring Transformations

translate: slide
reflect: flip

Use the graph to perform each transformation. The first one has been done for you.



1. Plot point A at $(4, 3)$. Translate point A left 5 units. Label this point B. Give the coordinates (x, y) of point B.

(−1, 3)

2. Plot point C at $(1, 1)$. Translate point C right 2 units and down 3 units. Label this point D. Give the coordinates (x, y) of point D.

_____

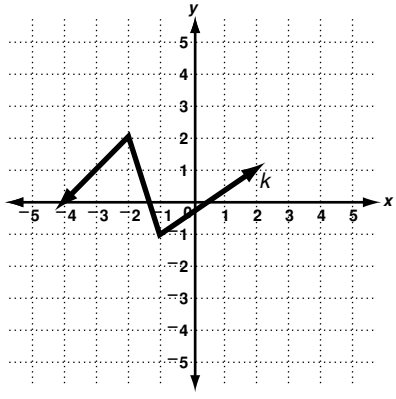
3. Transform $y = f(x)$ by translating it right 2 units. Label the new function $g(x)$. Compare the coordinates of the corresponding points that make up the 2 functions. Which coordinate changes, x or y?

_____

4. Transform $y = f(x)$ by reflecting it across the x-axis. Label the new function $h(x)$. Compare the coordinates of the corresponding points that make up the two functions. Which coordinate changes, x or y?

_____

Use the graph to perform each transformation.



5. Transform $y = k(x)$ by compressing it horizontally by a factor of $\frac{1}{2}$. Label the new function $m(x)$. Which coordinate is multiplied by $\frac{1}{2}$, x or y?

_____

6. Transform $y = k(x)$ by translating it down 3 units. Label the new function $p(x)$. What happens to the y-coordinate in each new ordered pair?

_____

7. Transform $y = k(x)$ by stretching it vertically by a factor of 2. Label the new function $q(x)$. Which coordinate is multiplied by 2, x or y?

_____

8. Describe how the coordinates of a function change when it is translated 2 units to the left and 4 units up.

_____

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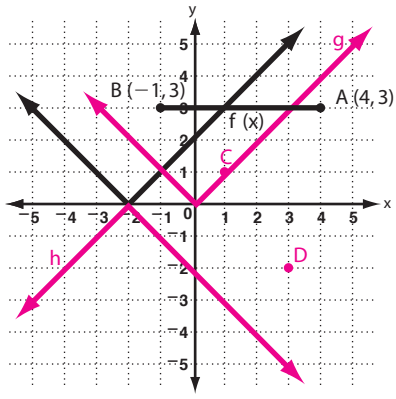
Use the graph to perform each transformation. The first one has been done for you.



1. Plot point A at $(4, 3)$. Translate point A left 5 units. Label this point B. Give the coordinates (x, y) of point B.

$(-1, 3)$

2. Plot point C at $(1, 1)$. Translate point C right 2 units and down 3 units. Label this point D. Give the coordinates (x, y) of point D.

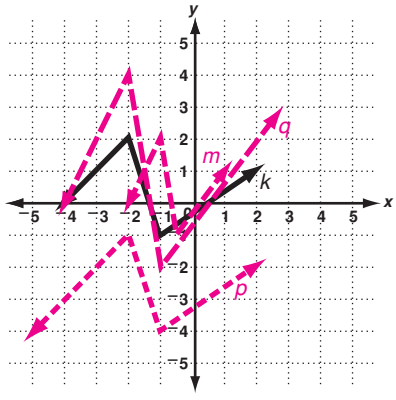
$(3, -2)$

3. Transform $y = f(x)$ by translating it right 2 units. Label the new function $g(x)$. Compare the coordinates of the corresponding points that make up the 2 functions. Which coordinate changes, x or y?

x-coordinate

4. Transform $y = f(x)$ by reflecting it across the x-axis. Label the new function $h(x)$. Compare the coordinates of the corresponding points that make up the two functions. Which coordinate changes, x or y?

y-coordinate



Use the graph to perform each transformation.

5. Transform $y = k(x)$ by compressing it horizontally by a factor of $\frac{1}{2}$. Label the new function $m(x)$. Which coordinate is multiplied by $\frac{1}{2}$, x or y?

x-coordinate

6. Transform $y = k(x)$ by translating it down 3 units. Label the new function $p(x)$. What happens to the y-coordinate in each new ordered pair?

It is 3 less than the original *y*-coordinate.

7. Transform $y = k(x)$ by stretching it vertically by a factor of 2. Label the new function $q(x)$. Which coordinate is multiplied by 2, x or y?

y-coordinate

8. Describe how the coordinates of a function change when it is translated 2 units to the left and 4 units up.

(x, y) becomes $(x - 2, y + 4)$.