

LESSON
1-1

Practice A
Exploring Transformations

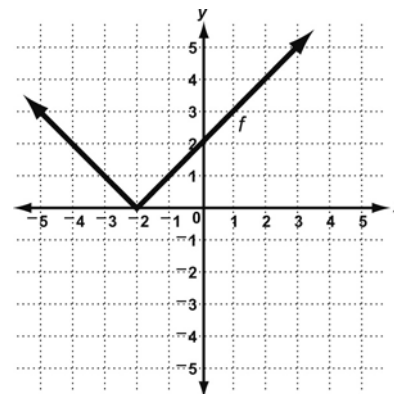
Use the graph to perform each transformation described.

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

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

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

- Transform $y = f(x)$ by reflecting it across the x -axis. Label the new function h . Which coordinate changes, x or y ?



Use the graph to perform each transformation described.

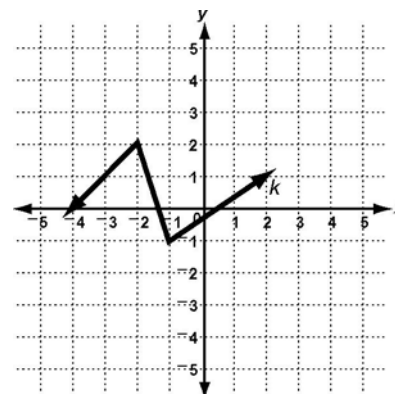
- Transform $y = k(x)$ by compressing it horizontally by a factor of $\frac{1}{2}$. Label the new function m . Which coordinate is multiplied by $\frac{1}{2}$, x or y ?

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

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

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

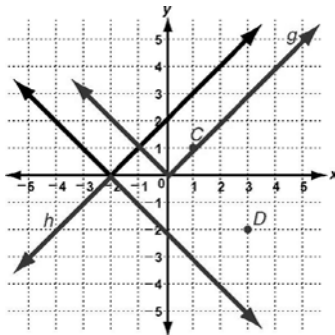
- Describe how the coordinates of a function change when you vertically compress a function by a factor of $\frac{2}{3}$.



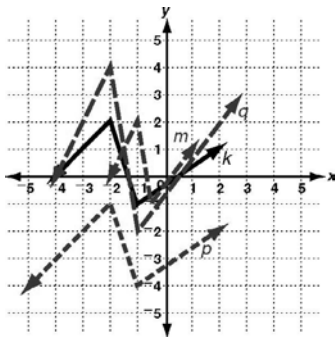
Answer for Foundations for Functions

1-1 EXPLORING TRANSFORMATIONS

Practice A



1. $(-1, 3)$
2. $(3, -2)$
3. x-coordinate
4. y-coordinate



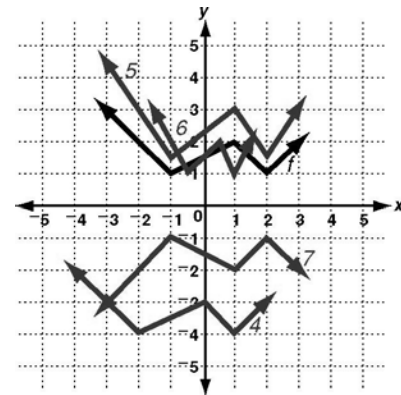
5. x-coordinate
6. It is 3 less than the original y-coordinate.
7. y-coordinate
8. (x, y) becomes $(x - 2, y + 4)$.
9. (x, y) becomes $(x, \frac{2}{3}y)$.

Practice B

1. $(-1, 5)$
2. $(2, -1)$
3. $(6, 7)$

4.

$x - 1$	x	y	$y - 5$
-4	-3	3	-2
-2	-1	1	-4
0	1	2	-3
1	2	1	-4
2	3	2	-3



5.

x	y	$\frac{3}{2}y$
-3	3	$\frac{9}{2}$
-1	1	$\frac{3}{2}$
1	2	3
2	1	$\frac{3}{2}$
3	2	3