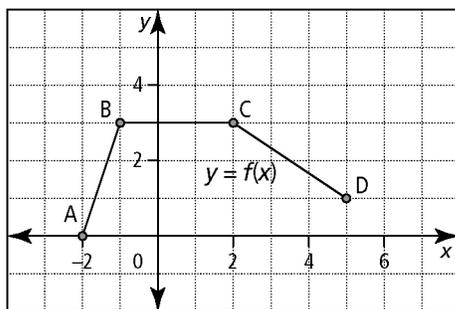


Section 1.2 Extra Practice

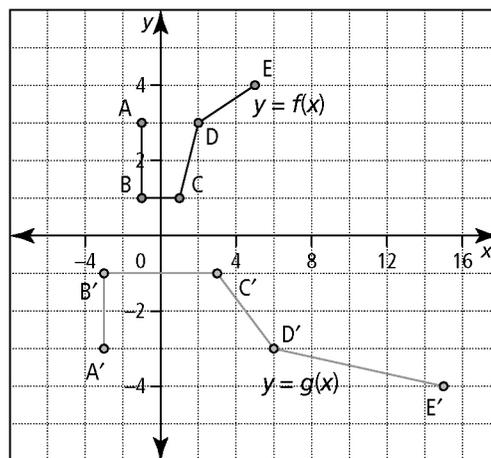
- Consider $f(x) = 2x - 4$.
 - Create a table of values for $f(x)$.
 - Graph $f(x)$ and $g(x) = -f(x)$ on the same grid.
 - How is the graph of $g(x)$ related to $f(x)$?
 - Name the invariant point(s), if any.
- Consider the function $f(x) = (x - 4)^2$.
 - Create a table of values for $f(x)$.
 - Graph $f(x)$ and $h(x) = f(-x)$ on the same grid.
 - How is the graph of $h(x)$ related to $f(x)$?
 - Name the invariant point(s), if any.
- Consider the graph of $y = f(x)$.



- Graph $y = 2f(x)$.
 - How is the graph of $y = 2f(x)$ related to $y = f(x)$?
 - Name the invariant point(s), if any.
- Consider the graph of $y = f(x)$ in #3.
 - Graph $y = f\left(\frac{1}{3}x\right)$.
 - How is the graph of $y = f\left(\frac{1}{3}x\right)$ related to $y = f(x)$?
 - Name the invariant point(s), if any.
 - Using mapping notation, describe how the graphs of the following can be obtained from the graph of $y = f(x)$.
 - $g(x) = 3f(x)$
 - $h(x) = f(-x)$
 - $y = -f(x)$
 - $g(x) = f(3x)$

- For the graph of $y = f(x)$, describe the effect of making the replacement described.

a) x with $3x$	b) x with $\frac{1}{4}x$
c) y with $-2y$	d) x with $-\frac{1}{2}x$
e) y with $4y$	f) y with $\frac{1}{5}y$
- Describe the transformation that must be applied to the graph of $f(x)$ to obtain the graph of $g(x)$. Then, determine an equation for $g(x)$.



- The domain of $y = f(x)$ is $\{x \mid -4 \leq x \leq 8, x \in \mathbb{R}\}$ and the range is $\{y \mid -6 \leq y \leq 12, y \in \mathbb{R}\}$. What are the domain and range of $g(x) = \frac{1}{3}f\left(\frac{1}{2}x\right)$?
- The domain of $y = f(x)$ is $\{x \mid -12 \leq x \leq 18, x \in \mathbb{R}\}$ and the range is $\{y \mid -3 \leq y \leq 6, y \in \mathbb{R}\}$. What are the domain and range of $g(x) = -2f(3x)$?
- Consider the function $f(x) = (x + 4)(x - 5)$. What are the zeros of the function if the graph is transformed by a horizontal stretch about the y -axis by a factor of 3 and reflected over the y -axis?

