

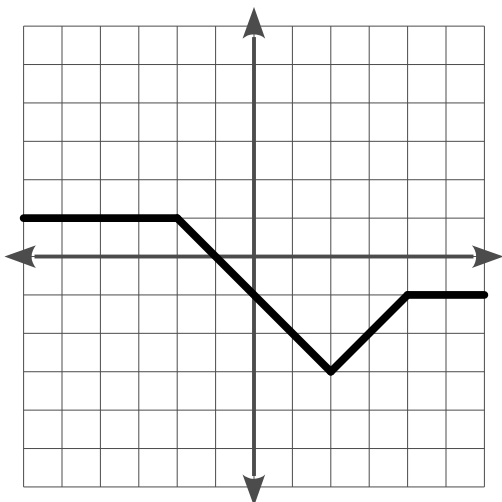
Practice Test: Function Transformations

Show your work. Unless stated otherwise, each part of a question is 3 points, scored as follows:

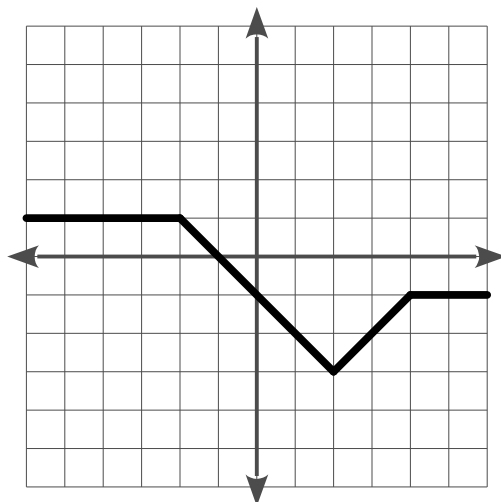
- 3 pts: Completely correct.
- 2 pts: One minor error.
- 1 pt: Multiple minor errors or one major.
- 0 pt: Blank or completely off-track.

Graph the transformed function...

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



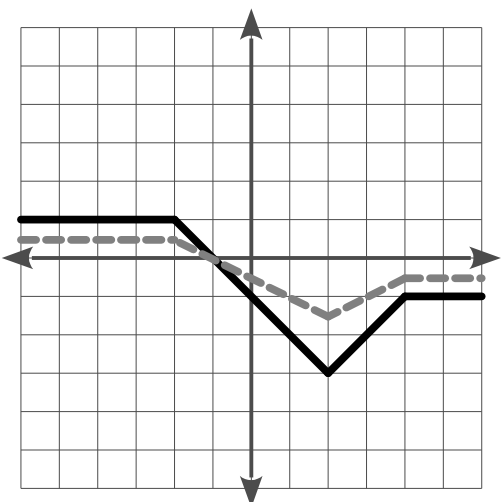
2) $g(x) = 2f(-x)$



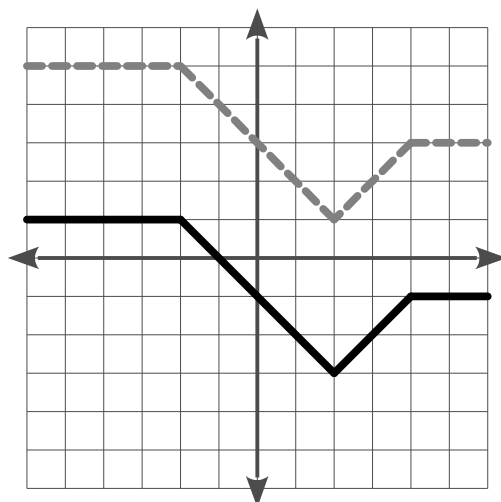
Write an expression for the transformation...

The parent function $f(x)$ is shown in black. The transformed function $g(x)$ is shown in gray.

3) $g(x) =$



4) $g(x) =$



Write an expression for these transformations...

5) $g(x)$ is 3 times “faster” than $f(x)$... $g(x)=$

6) $g(x)$ is 8 left of $f(x)$... $g(x)=$

7) $g(x)$ is 2 below $f(x)$ and is 5 to the right of it... $g(x)=$

8) $g(x)$ is a horizontal reflection of $f(x)$ and is 4 times taller... $g(x)=$

Find transformed rules for functions...

9) Suppose $f(x)=10x-15$. Find rules for these transformed functions...

A) $g(x)=f(x)+5$

B) $g(x)=2f(x)+15$

C) $g(x)=f(x+3)$

10) Suppose $f(x)=\begin{cases} 2x+5, & \text{if } x < 2 \\ 3x+1, & \text{if } x \geq 9 \end{cases}$. Find rules for these transformed functions. Remember to give your answer in the proper form for a piecewise function, with domains and the curly brace – just the same way $f(x)$ is given above.

A) $g(x)=3f(x)$

B) $g(x)=f(x-5)$

Evaluate functions

11) Suppose $f(x)=3x+5$ and $g(x)=f(x)+4$.

A) Evaluate $f(2)$.

B) Evaluate $g(2)$.

12) Suppose $f(x)=3x+5$ and $h(x)=f(x-3)$.

A) Evaluate $f(7)$.

B) Evaluate $h(7)$.

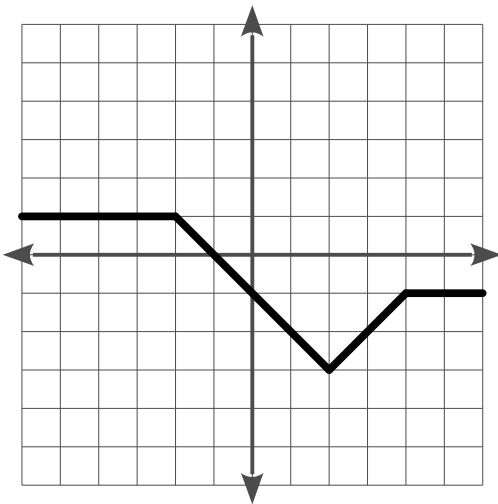
13) Suppose $f(x)=3x+5$ and $j(x)=-2f(5x)$.

A) Evaluate $f(4)$.

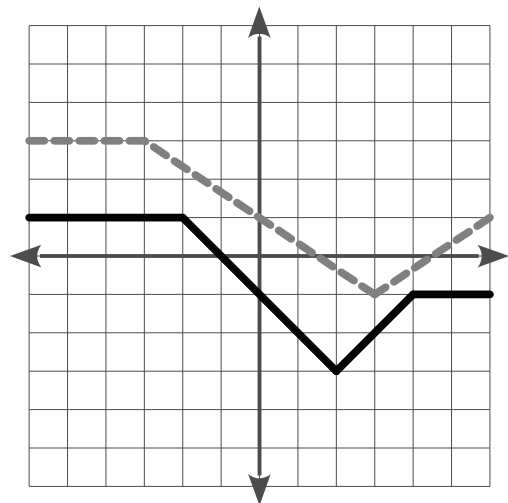
B) Evaluate $j(4)$.

Honors students

14) Graph $g(x)=f(-2x)-2$



15) $g(x)=$



16) Remember $f(x)=\begin{cases} 2x+5, & \text{if } x < 2 \\ 3x+1, & \text{if } x \geq 9 \end{cases}$? Find $g(x)=f\left(\frac{1}{6}x\right)-4$.