

NAME _____

DATE _____

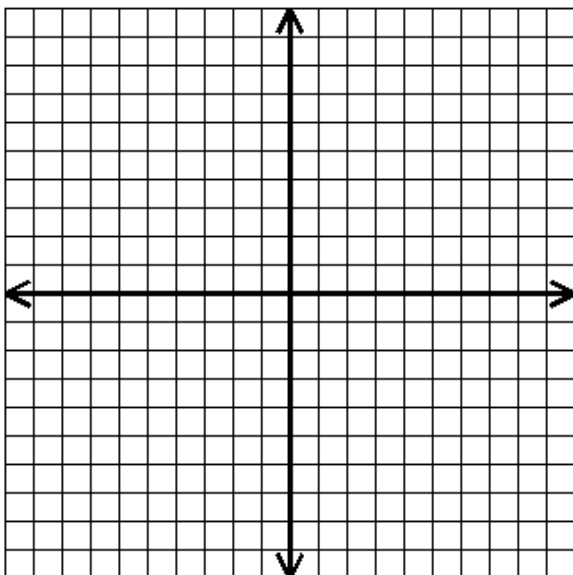
PER. _____

TRANSFORMATIONS OF LINEAR FUNCTIONSIf $f(x) = x$ and $g(x)$ is the transformed function, fill in the table below.

Transformation	$g(x)$
1) Shift $f(x)$ down 5 units	
2)	$g(x) = -x + 1$
3) Stretch $f(x)$ vertically by a factor 2, and shift left 3 units.	
4)	$g(x) = (x - 4)$
5) Compress $f(x)$ by a factor of $\frac{1}{6}$, translate down 2 units, shift left 3.5 units	
6) $f(x)$ gets steeper by a factor of 9, reflect across the x-axis, and translate right 16 units	

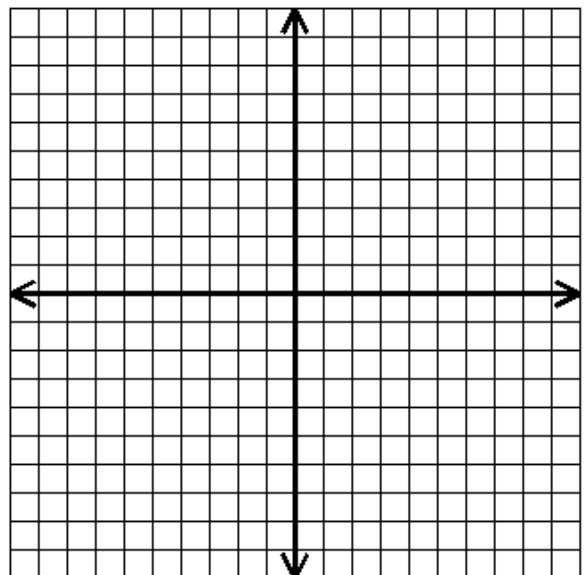
If $f(x) = x$ and $g(x)$ is the transformed function, graph the following.

7) $g(x) = f(x)$



m = _____ b = _____

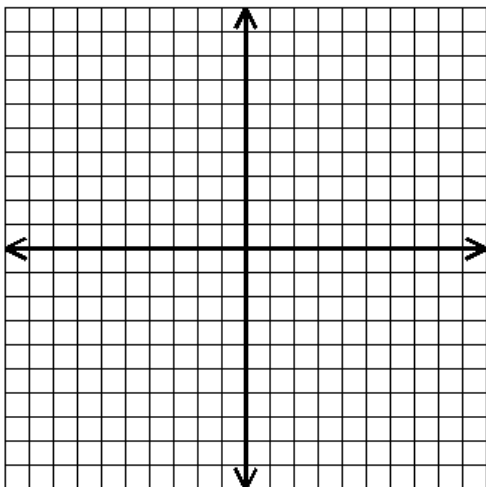
8) $g(x) = -f(x) + 5$



m = _____ b = _____

If $f(x) = x$ and $g(x)$ is the transformed function, graph both lines on the same grid, and answer the questions that follow.

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



How does $g(x)$ compare to $f(x)$?

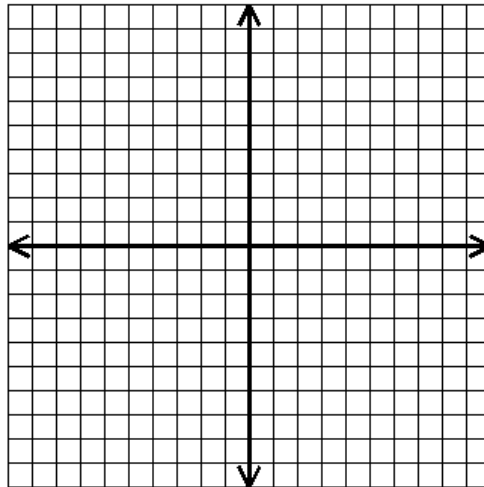
- A. $g(x)$ is steeper
- B. $g(x)$ is less steep
- C. The steepness is the same.

How does $g(x)$ compare to $f(x)$?

- A. $g(x)$ has a larger y-intercept
- B. $g(x)$ has a smaller y-intercept
- C. The y-intercepts are the same.

The solution to the system of $f(x)$ and $g(x)$ is _____.

10) $g(x) = -\frac{1}{2}f(x) - 3$



How does $g(x)$ compare to $f(x)$?

- A. $g(x)$ is steeper
- B. $g(x)$ is less steep
- C. The steepness is the same.

How does $g(x)$ compare to $f(x)$?

- A. $g(x)$ has a larger y-intercept
- B. $g(x)$ has a smaller y-intercept
- C. The y-intercepts are the same.

$g(x)$ is _____ units above / below $f(x)$.

For Examples 11 – 15, $f(x)$ can be linear or quadratic. Match the given equation with the transformation described. Each question may have > 1 answer.

_____ 11) $g(x) = -f(x) - 3$

_____ 12) $g(x) = -f(x + 2) + 1.5$

_____ 13) $g(x) = f(x - 1)$

_____ 14) $g(x) = \frac{1}{2}f(x) + 4$

_____ 15) $g(x) = 2f(x) - 3$

A. Vertical Stretch (steeper)

B. Vertical Compression (less steep)

C. Reflection

D. Shift left

E. Shift right

F. Shift up

G. Shift down