Name _____ Date _____ Class_____

Practice B
Transforming Functions

Given $f(x) = \begin{cases} x^2 - 9x - 1 & \text{if } x < 0 \\ 10 - x & \text{if } x \geq 0 \end{cases}$, **write the rule for each function.**

1. $h(x)$, a reflection of $f(x)$ across the y-axis   _____

2. $k(x)$, a vertical stretch of $f(x)$ by a factor of 2   _____

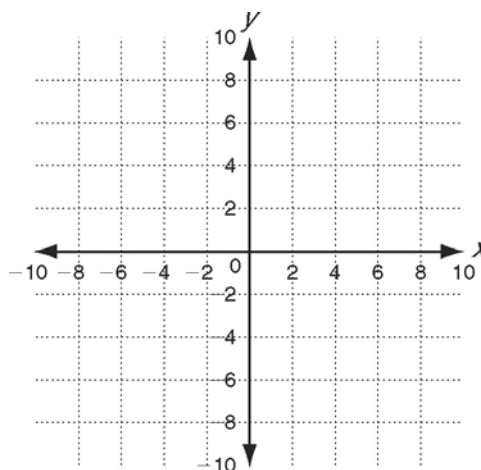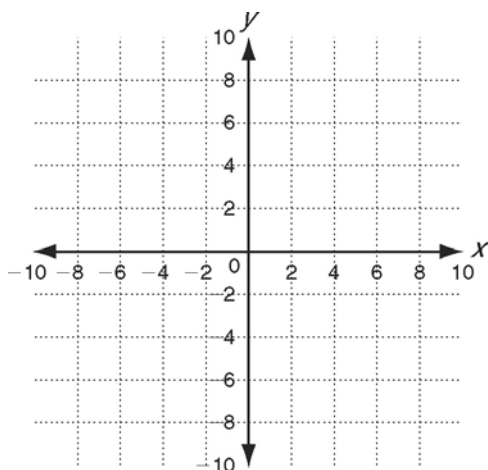3. $g(x)$, a horizontal translation 2 units right   _____

Identify the x- and y-intercepts of $f(x)$. Then identify the x- and y-intercepts of $g(x)$.

4. $f(x) = x^2 - 36$ _____ $g(x) = f(2x)$ _____

5. $f(x) = -3x + 12$ _____ $g(x) = -2f(x)$ _____

Given $f(x)$, graph $g(x)$.

6. $f(x) = x^2 + 2x + 1$ and $g(x) = -f\left(\dfrac{x}{2}\right)$

7. $f(x) = 3x - 6$ and $g(x) = f(-x)$

Solve.

8. Ron walks from his house to the parking garage at a rate of 8 feet per second. The parking garage is 3960 feet from the house. The distance can be represented by the function $D(x) = 8x$, where x is the time, in seconds. Walking back to his house, Ron increases his speed by 25%.

   a. Write a function to show the distance Ron is from the house as he walks back from the parking garage. _____

   b. How far is Ron from his house 2 minutes after leaving the parking garage?   _____