

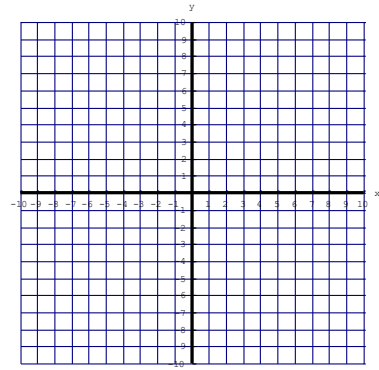
# Transformations of Transformations Worksheet

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

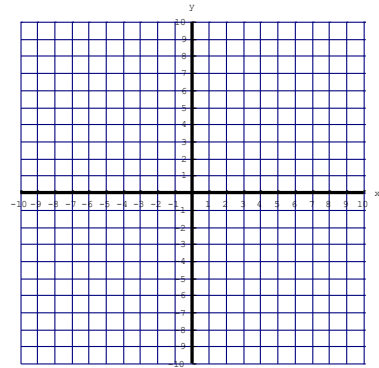
- 1) Write an equation for the function  $f(x) = 2|x| + 1$  translated left three units.
- 2) Write an equation for the function  $f(x) = 3x^2 + 5$  translated down two units.
- 3) Write an equation for the function  $f(x) = \frac{1}{2}x^3$  flipped vertically.
- 4) Write an equation for the function  $f(x) = -3\sqrt{x-1}$  compressed by a factor of  $\frac{1}{5}$ .
- 5) The function  $f(x) = \frac{1}{6}|x|$  is stretched vertically by a factor of 9. Which of the following is the new function?  
A.  $9|x|$       B.  $\frac{10}{6}|x|$       C.  $\frac{1}{54}|x|$       D.  $\frac{3}{2}|x|$
- 6) The function  $f(x) = 2x^2$  is flipped vertically and shifted up 4. How would you write the new equation?
- 7) The function  $y = -(x-3)^2$  is flipped vertically, stretched by a factor of 3, and translated left 4 units. What function would represent the new transformation?
- 8) The function  $f(x) = 8(x-4)^3 - 3$  flipped, compressed by a factor of  $\frac{1}{2}$  and translated down 5 units. What function would represent the new transformation?
- 9) What is the equation of  $y = 2|x+4|$  flipped vertically and translated right three units?
- 10) What is the equation of the function  $y = \frac{1}{2}(x-2)^2 + 2$  translated down two units, left two units, and stretched by a factor of 2?

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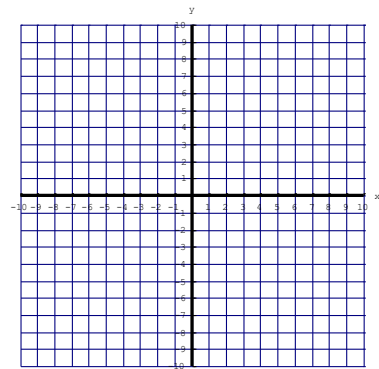
11. What transformations are done to  $f(x)$  to create  $g(x)$  if  $f(x) = x^2 + 4$  and  $g(x) = -9(x - 1)^2 - 2$ ?



12. What transformations are done to  $f(x)$  to create  $g(x)$  if  $f(x) = |x|$  and  $g(x) = 5|x + 1| + 2$ ?

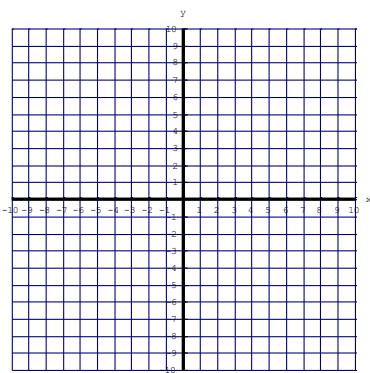


13. What transformations are done to  $f(x)$  to create  $g(x)$  if  $f(x) = |x - 3| + 2$  and  $g(x) = 5|x + 1| + 2$ ?



14. Graph the original function and then that function with the transformations indicated.

$f(x) = |x - 3|$   
Shifted up 1  
Flipped vertically



$f(x) = 4\sqrt{x - 2}$   
Compressed by a factor of  $\frac{1}{8}$   
Shifted left 3

