Section 7-1 & 7-2
Review

Name _____

For #1-10 , use the following functions: $f(x) = 4x + 3$ $g(x) = 2x - 5$ $h(x) = x^2 - 1$

1)   Find $(f + g)(x)$

2)   Find $(h - g)(x)$

3)   Find $(f \cdot g)(x)$

4)   Find $(h \circ f)(x)$

For the following problems, plug in the number for one function, then take each answer to plug into the next function.

5) $f(g(7))$

6) $h [f(-2)]$

7) $(g \circ h)(5)$

8) $g [f(11)]$

9) $f(g(h(1)))$

10) $h [(g \circ f)](-3)$

For each pair of functions (in coordinate form), find $f \circ g$ and $g \circ f$, if they exist. If one does not exist do not include it in your answer.

11) $f = \{ (1, -9), (0, 0), (-3, 8), (-5, -5) \}$
       $g = \{ (0, -3) (-5, 0), (-7, 1), (-9, 0) \}$

$f \circ g =$ _____

$g \circ f =$ _____

12)   Use the same functions listed in #11, but this time write their inverse functions.

$f^{-1} =$ _____ $g^{-1} =$ _____

13) Prove (or disprove) the following functions are inverses of one another. (find f ∘ g and g ∘ f to determine if the both equal "x")

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

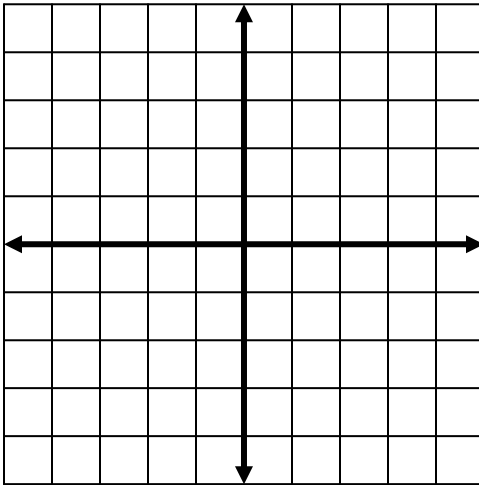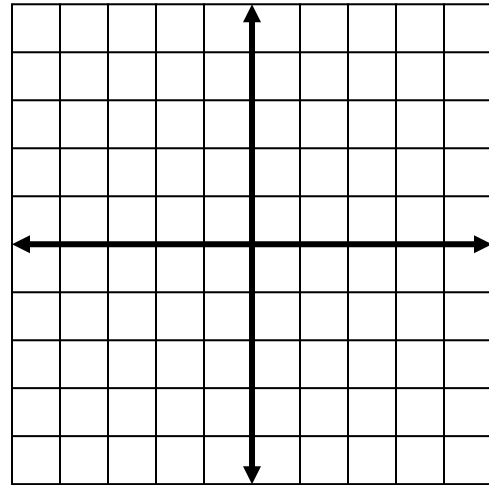$$g(x) = \frac{1}{2}x + 9$$

f ∘ g	g ∘ f

For the following functions; a) find their inverse equation – show work in the box, b) graph both the original function and its inverse on the grid provided. Be sure to label each as either "y" or "y⁻¹".
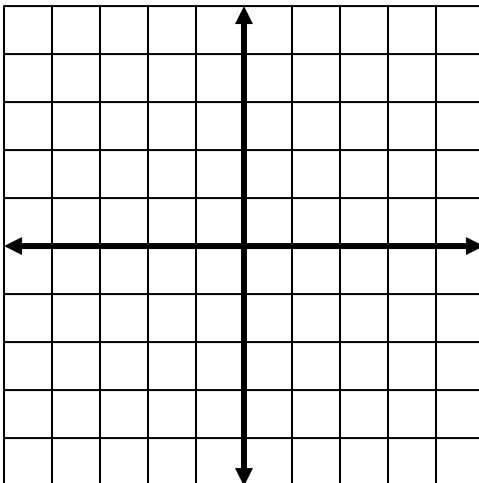
14)   y = 4x + 3

15) $y = \frac{2}{3}x - 2$

16) $f(x) = \frac{9 - 3x}{2}$

17)   y = 4