

Name:

Date:

Topic/ Objective: Combining Functions Day 2

Homework:

Examples:  $f(x) = 2x + 4$  and  $g(x) = -3x - 1$

Find:  $(f + g)(x) = f(x) + g(x)$

$$\begin{aligned}2x + 4 + -3x - 1 \\2x - 3x + 4 - 1 \\-x + 3\end{aligned}$$

Find:  $(f + g)(3)$

$$\begin{aligned}(f + g)(x) &= -x + 3 \\(f + g)(3) &= -3 + 3 \\&= 0\end{aligned}$$

Find:  $(f - g)(x)$

$$\begin{aligned}2x + 4 - (-3x - 1) \\2x + 4 + 3x + 1 \\2x + 3x + 4 + 1 \\5x + 5\end{aligned}$$

Find:  $(f - g)(5)$

$$\begin{aligned}(f - g)(x) &= 5x + 5 \\(f - g)(5) &= 5(5) + 5 \\&= 25 + 5 \\&= 30\end{aligned}$$

Find:  $(3f)(x)$

$$\begin{aligned}f(x) &= 2x + 4 \\3f(x) &= 3(2x + 4) \\&= 6x + 12\end{aligned}$$

Find:  $(3g)(x)$

$$\begin{aligned}g(x) &= -3x - 1 \\(3g)(x) &= 3(-3x - 1) \\&= -9x - 3\end{aligned}$$

Find:  $(3f)(3)$

$$\begin{aligned}(3f)(x) &= 6x + 12 \\(3f)(3) &= 6(3) + 12 \\&= 18 + 12 \\&= 30\end{aligned}$$

Find:  $(3g)(5)$

$$\begin{aligned}(3g)(x) &= -9x - 3 \\(3g)(5) &= -9(5) - 3 \\&= -45 - 3 \\&= -48\end{aligned}$$