Name _____ Date _____

Year Group _____

Find $(f \circ g)(x)$ and $g \circ f(x)$ where $f(x) = 4x - 2$ and $g(x) = 2x^2 + 1$

1. $(f \circ g)(x)$

$f(g(x))$

Steps = $f((2x^2 + 1))$

$\_\_\_\_\_ (2x^2 + 1) - 2$

$8x^2 + \_\_\_\_\_ - 2$

Answer = $\_\_\_\_\_ x^2 + \_\_\_\_\_$

2. $(g \circ f)(x)$

$g(f(x))$

Steps = $g((4x - 2))$

$2(\_\_\_\_\_)^2 + 1$

$2(4x - 2)(\_\_\_\_\_) + 1$

$(\_\_\_\_\_ x - 4)(4x - 2) + \_\_\_\_\_$

$\_\_\_\_\_ x^2 - 16x - \_\_\_\_\_ x + 8 + 1$

Answer = $\_\_\_\_\_ x^2 - 32x + \_\_\_\_\_$

Find $(f \circ g)(x)$ and $g \circ f(x)$ where $f(x) = 3x + 1$ and $g(x) = -2x^2 - 4$

3. $(f \circ g)(x)$

Steps => $(f \circ g)(x) = f(\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_ \_\_\_\_\_)$

Answer => _____ _____ ____ _____

4. $(g \circ f)(x)$

Steps => $(g \circ f)(x) = g(\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_ \_\_\_\_\_)$

Answer => _____ _____ ____ _____ _____ ____ _____