

Math 1513 - College Algebra
Quiz #9 - 2008.10.28
Solutions

Let $f(x) = 3x + 1$ and $g(x) = 2x^2 - 1$. Answer the following questions.

1. What is $(f \circ g)(x)$?

$$(f \circ g)(x) = 3(2x^2 - 1) + 1$$

2. What is $(g \circ f)(x)$?

$$(g \circ f)(x) = 2(3x + 1)^2 - 1$$

3. What is $(g \circ f)(1)$?

$$\begin{aligned}(g \circ f)(1) &= 2(3 \cdot 1 + 1)^2 - 1 \\ &= 2 \cdot 16 - 1 \\ &= 31\end{aligned}$$

4. What is $(f \circ g)(-1)$?

$$\begin{aligned}(f \circ g)(-1) &= 3(2(-1)^2 - 1) + 1 \\ &= 3 + 1 \\ &= 4\end{aligned}$$

5. What is $(f \circ g)(3a + 2)$?

$$(f \circ g)(3a + 2) = 3(2 \cdot (3a + 2)^2 - 1) + 1$$