Math 1513 - College Algebra

Quiz #14 - 2018.10.12

Solutions

If Let $f(x)$ be a function such that $f(1) = 5$, $f(2) = -1$ and $f(3) = 6$, and $g(x)$ similarly defined such that $g(-1) = 2$, $g(4) = 3$ and $g(6) = 1$. Evaluate, if possible, each of the following. If it is not possible, state as much.

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

   $(f \circ g)(-1) = f(g(-1)) = f(2) = -1$.

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

   $(g \circ f)(3) = g(f(3)) = g(6) = 1$.

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

   $(g \circ f)(1) = g(f(1)) = g(5)$, but $g(5)$ does not exist because 5 is not in the domain of g, therefore the composition is not possible.

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

   $(f \circ g)(3) = f(g(3))$, but $g(3)$ does not exist because 3 is not in the domain of g, therefore the composition is not possible.