

1

Given $f(x) = \frac{2x^2 + 3}{1 - x}$ and $g(x) = -x + 2$.

What is the rule of the following represents $(f \circ g)(x)$?

2

Given the function f defined by $f(x) = \frac{8x - 2}{3x}$ and the function h defined by $h(x) = \frac{12x + 4}{2x + 1}$.

Which of the following can be used to obtain the function g defined by $g(x) = \frac{52x^2 + 16x - 2}{6x^2 + 3x}$,

given the rules of f and h ?

A) $g(x) = (f \circ h)(x)$

C) $g(x) = (f \times h)(x)$

B) $g(x) = (f + h)(x)$

D) $g(x) = (f - h)(x)$

3

Given function f such that $f(x) = 2x - 1$ and function g defined by $g(x) = 3x^2 + 5$. Determine the following:

a) $(f + g)(5)$

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

c) $(g \div f)(3)$

d) $(f - g)(-4)$

4

Given the function $f(x) = 3x - 2$ and the function $g(x) = -4[-2x + 6] - 1$.

a) What is the rule of the composition $g \circ f$?

b) What is $(g \circ f)(-0.5)$?

5

Given $f(x) = 2\sqrt{x - 3} + 6$ and $g(x) = -4x + 5$. Determine $(f \circ g)(x)$.

6

A scientific probe determines that the temperature of the sun, starting on January 1st, varies according to the equation $T(x) = 107.5\sqrt{x} + 3200$, where x is the number of days since January 1st and $T(x)$ is the temperature in degrees Kelvin. The rule that converts degrees Kelvin into degrees Fahrenheit is $F = 1.8k - 459.67$, where k is the temperature in degrees Kelvin and F , the temperature in degrees Fahrenheit.

a) What is the temperature of the sun in degrees Fahrenheit on January 25th?

b) What equation can be used to calculate the temperature of the sun directly in degrees Fahrenheit since January 1st?