

Exercise 44

For the following exercises, express each function H as a composition of two functions f and g where $H(x) = (f \circ g)(x)$.

$$H(x) = \frac{1}{(3x^2 - 4)^{-3}}$$

Solution

Choose

$$f(x) = \frac{1}{x} \quad \text{and} \quad g(x) = (3x^2 - 4)^{-3}$$

so that

$$H(x) = (f \circ g)(x) = f(g(x)) = \frac{1}{(3x^2 - 4)^{-3}}.$$