Exercise 12

Express $H(x) = \sqrt[3]{5x^2 - 3x}$ as a composition of two functions, f and g, where $(f \circ g)(x) = H(x)$.

Solution

Choose

$$f(x) = \sqrt[3]{x} \quad \text{and} \quad g(x) = 5x^2 - 3x$$

so that

$$H(x) = (f \circ g)(x) = f(g(x)) = \sqrt[3]{5x^2 - 3x}.$$