

Exercise 25

For the following exercises, find the average rate of change of the functions from $x = 1$ to $x = 2$.

$$f(x) = 10x^2 + x$$

Solution

Calculate the average rate of change of $f(x)$ from $x = 1$ to $x = 2$.

$$\begin{aligned}\frac{f(2) - f(1)}{2 - 1} &= \frac{[10(2)^2 + (2)] - [10(1)^2 + (1)]}{2 - 1} \\ &= \frac{[10(4) + 2] - [10(1) + 1]}{1} \\ &= 42 - 11 \\ &= 31\end{aligned}$$