

Exercise 28

For the following exercises, find the average rate of change of each function on the interval specified.

$$f(x) = x^2 \text{ on } [1, 5]$$

Solution

The average rate of change of the function between $x = 1$ and $x = 5$ is

$$\begin{aligned}\frac{f(5) - f(1)}{5 - 1} &= \frac{(5)^2 - (1)^2}{5 - 1} \\ &= \frac{25 - 1}{4} \\ &= \frac{24}{4} \\ &= 6.\end{aligned}$$