Exercise 8

For the following exercises, find the average rate of change of each function on the interval specified for real numbers b or h.

$$k(x) = 4x - 2 \text{ on } [3, 3 + h]$$

Solution

The average rate of change of the function on $[3, 3 + h]$ is

$$\begin{aligned}
\frac{k(3+h) - k(3)}{(3+h) - 3} &= \frac{[4(3+h) - 2] - [4(3) - 2]}{h} \\
&= \frac{(12 + 4h - 2) - (12 - 2)}{h} \\
&= \frac{12 + 4h - 2 - 12 + 2}{h} \\
&= \frac{4h}{h} \\
&= 4.
\end{aligned}$$