Exercise 7

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

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

Solution

The average rate of change of the function on $[2, 2 + h]$ is

$$
\begin{aligned}
\frac{p(2 + h) - p(2)}{(2 + h) - 2} &= \frac{[3(2 + h) + 4] - [3(2) + 4]}{h} \\
&= \frac{(6 + 3h + 4) - (6 + 4)}{h} \\
&= \frac{6 + 3h + 4 - 6 - 4}{h} \\
&= \frac{3h}{h} \\
&= 3.
\end{aligned}
$$