

4. The rate of change of $1/x$ at $x = -3/2$ is

$$\begin{aligned}\lim_{h \rightarrow 0} \frac{\frac{1}{-(3/2) + h} - \left(\frac{1}{-3/2}\right)}{h} &= \lim_{h \rightarrow 0} \frac{\frac{2}{2h - 3} + \frac{2}{3}}{h} \\ &= \lim_{h \rightarrow 0} \frac{2(3 + 2h - 3)}{3(2h - 3)h} \\ &= \lim_{h \rightarrow 0} \frac{4}{3(2h - 3)} = -\frac{4}{9}.\end{aligned}$$