

WRITE YOUR NAME:

MAC 2311 Quiz 1
Wednesday February 1st

Question 1. Evaluate the limit.

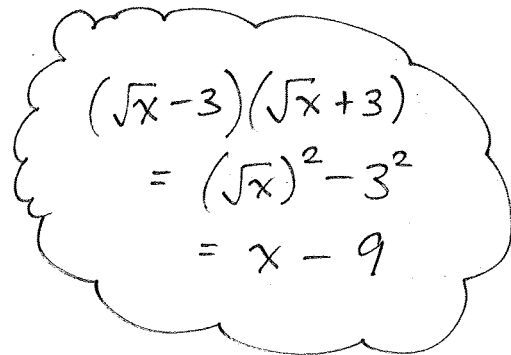
$$\lim_{x \rightarrow 9} \frac{\sqrt{x} - 3}{x - 9}$$

$$\lim_{x \rightarrow 9} \frac{(\sqrt{x} - 3)(\sqrt{x} + 3)}{(x - 9)(\sqrt{x} + 3)}$$

$$= \lim_{x \rightarrow 9} \frac{x - 9}{(x - 9)(\sqrt{x} + 3)}$$

$$= \lim_{x \rightarrow 9} \frac{1}{\sqrt{x} + 3}$$

$$= \frac{1}{\sqrt{9} + 3} = \frac{1}{3 + 3} = \frac{1}{6}$$


$$\begin{aligned} &(\sqrt{x} - 3)(\sqrt{x} + 3) \\ &= (\sqrt{x})^2 - 3^2 \\ &= x - 9 \end{aligned}$$