

WRITE YOUR NAME:

MAC 2311 Quiz 1  
Friday September 29th

Question 1. Evaluate the limit.

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

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

$$= \lim_{x \rightarrow 9} \frac{(\sqrt{x})^2 - 3^2}{(x - 9)(\sqrt{x} + 3)} = \lim_{x \rightarrow 9} \frac{x - 9}{(x - 9)(\sqrt{x} + 3)}$$

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