

19. To be proved: $\lim_{x \rightarrow 1} \sqrt{x} = 1$.

Proof: Let $\epsilon > 0$ be given. We have

$$|\sqrt{x} - 1| = \left| \frac{x - 1}{\sqrt{x} + 1} \right| \leq |x - 1| < \epsilon$$

provided $|x - 1| < \delta = \epsilon$. This completes the proof.