

1. Compute: $\lim_{x \rightarrow 1} \frac{x^2 - 3x + 5}{x - 2}$

2. Let $f(x) = \begin{cases} x + 3 & x \neq 1 \\ 2 & x = 1 \end{cases}$

Compute $\lim_{x \rightarrow 1} f(x)$.

3. Find the derivative of $f(x) = x^2 + 1$.

4. A sports manufacturer has determined that the weekly demand function of their cricket bats is given by: $p = 144 - q^2$. Find the average rate of change in the unit price of a cricket bat if the quantity demanded is between 5 and 6 cricket bats, and between 5 and 10 cricket bats. What is the instantaneous rate of change of the unit price when the quantity demanded is 50 cricket bats?