

Practice Exercise For Lecture 10

Q1. Evaluate $\lim_{x \rightarrow 5} \frac{x-5}{x^2-25}$. (Ans. 1/10)

Q2. Evaluate $\lim_{x \rightarrow 2} \frac{x^2-7x+10}{x-2}$. (Ans. -3)

Q3. Evaluate $\lim_{x \rightarrow 3} \frac{3x^3-9x^2+x-3}{x^2-9}$. (Ans. 14/3)

Q4. Let $f(x) = \begin{cases} 3-x, & x < 2 \\ \frac{x}{2}+1, & x > 2 \end{cases}$

Determine whether $\lim_{x \rightarrow 2} f(x)$ exist or not?

Q5. If $f(x) = \begin{cases} 3x+7, & 0 < x < 3 \\ 16, & x = 3 \\ x^2+7, & 3 < x < 6 \end{cases}$,

then show that $\lim_{x \rightarrow 3} f(x) = f(3)$.