King Fahd University of Petroleum and Minerals
College of Sciences
Dep. of Math. & Stat.
Quiz #1(A)

St. ID: St. Name: Sec#: Serial#:

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1) $\lim_{t\to 2} \frac{t^2 - t - 2}{t^2 + 3t - 10} =$

A) $-\infty$ B) $\frac{1}{5}$ C) -1 D) $\frac{3}{7}$ E) ∞

2) $\lim_{x\to -1} \frac{x^2 + 4x + 3}{x^2 - x - 2} =$

A) ∞ B) 1 C) $-\frac{2}{3}$ D) -4 E) 0

3) If $f(x) = 3x - 7$, then $\lim_{h\to 0} \frac{f(x+h) - f(x)}{h} =$

A) 0. B) $3x$. C) -7. D) 3. E) does not exist

4) $\lim_{x\to 2+} \frac{4}{x - 2} =$

A) $-\infty$ B) -2 C) ∞ D) 4 E) 0

5) $\lim_{x\to \infty} \frac{4x^2 + 2x + 1}{(x-1)^2} =$

A) 2 B) 0 C) 1 D) 4 E) ∞

6) If $f(x) = \begin{cases} x + 1, & \text{if } x \geq 1 \\ x - 1, & \text{if } x < 1 \end{cases}$, then $\lim_{x\to 1} f(x) =$

A) 0 B) $-\infty$ C) 2 D) ∞ E) does not exist

7) Let $f(x) = \frac{x(x+1)}{x^2 - 1}$. The only value(s) of x for which f is discontinuous is (are)

A) 0. B) -1 and 1. C) 1. D) -1. E) -1, 0, and 1.

8) Let $f(x) = \begin{cases} 2 - x^2 & \text{if } x > 1 \\ -2 + 3x & \text{if } 0 \leq x \leq 1 \\ 1 - x^2 & \text{if } x < 0 \end{cases}$

Find all points of discontinuity for this function.