King Fahd University of Petroleum and Minerals
Math. & Stat. Departement
QUIZ # 2

Name	ID	SEC 06	Sr

Q1) Evaluate each limit, if it exists.

a) $\lim_{x\to-\infty} \frac{9x^3-4}{2x^2-\sqrt[3]{x^9+4}}$

b) $\lim_{x\to\infty} \left[e^{-x}\cos x + \tan^{-1}\left(\frac{x+1}{\sqrt{3}\,x}\right)\right]$

Q2) Find the equation of the tangent line to the curve $y = \frac{x-1}{x+1}$ at the point $\left(2, \frac{1}{3}\right)$

Q3) For what values of A does the function $f(x)$ have a removalble discontinuity at $x = 0$?

$$f(x) = \begin{cases} A - sinx & if\ x < 0 \\ 1 & if\ x = 0 \\ x^2 - A^2 + 2 & if\ x > 0 \end{cases}$$

Q4) Use the Intermediate Value Theorem to show that the equation $x^2 - \cos x = 0$ has at least **two roots** between $-\pi\ and\ \pi$.