

King Fahd University of Petroleum and Minerals
Math. & Stat. Department
163-Math 101 Quiz (2)

Name	ID	SEC 09
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Q1) Find all discontinuities of

$$f(x) = \begin{cases} \frac{x^2 + x - 2}{x^2 - 1} & \text{if } x < 1 \\ \frac{2x^2 - x - 1}{3x^2 - 4x + 1} & \text{if } x > 1 \end{cases}$$

and state their types.

Q2) Find the horizontal asymptotes of $f(x) = \sqrt{2x^2 + x} - \sqrt{2x^2 - x}$.

Q3) Find the equation of the tangent line to $f(x) = \sqrt{1-2x}$ at $x = 0$. You must use the limits to find the slope.