

King Fahd University of Petroleum and Minerals
Math. & Stat. Department
163-Math 101 Quiz (1)

Name	ID	SEC 12
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Q1) Find all horizontal asymptotes of $f(x) = \frac{3e^x - 1}{e^x + 1}$.

Q2) If $\lim_{x \rightarrow 2} f(x) = 5$ and $\lim_{x \rightarrow 1} g(2x) = 3$, then find $\lim_{x \rightarrow 2} \tan^{-1} \left(\frac{\sqrt{f(x) - 2}}{g(x)} \right)$.

Q3) To prove that $\lim_{x \rightarrow 3} \sqrt{7-x} = 2$ by using the $\varepsilon - \delta$ definition of the limit, we find that for given $\varepsilon = 1$, what is the largest possible value for δ ?

Q4) Evaluate $\lim_{x \rightarrow 1} \frac{1 - \frac{1}{\sqrt{x}}}{x - 1}$.