King **F**ahd **U**niversity for **P**etroleum and **M**inerals
Department of Mathematics & Statistics
Term 163 Math 101 (01) Quiz#2 (2.5, 2.6, 2.7 & 2.8)
Family Name: S.r#

Q1. Find the number(s) at which $f(x)=\dfrac{x^3+x^2}{x^2-x}$ is **Not Continuous** and **Determine its type** of discontinuity.

Q2. Find $\lim\limits_{x\to\infty} 2^{\frac{\sin x}{x}}$.

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Term 163 Math 101 (11) Quiz#2 (2.5, 2.6, 2.7 & 2.8)
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Q1. If $f(x)=\begin{cases} x+1, & \text{if } x<1 \\ 1, & \text{if } x=1 \\ \frac{1}{x}, & \text{if } x>1 \end{cases}$, find $f'_{+}(1)$, and $f'_{-}(1)$

Q2. **Use limits** to find the horizontal asymptote(s) -if any- for $f(x)=\dfrac{e^{-x}-4}{2e^{-x}+1}$.