

Math 155 Worksheet 11

Name:

ID:

1. Find the limits.

(a) $\lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x \sin(x)}$.

(b) $\lim_{x \rightarrow 1^+} \left(\frac{x}{x-1} - \frac{1}{\ln(x)} \right)$.

(c) $\lim_{x \rightarrow 0^+} \sin(x) \ln(x)$.

(d) $\lim_{x \rightarrow \frac{\pi}{2}^-} (\tan(x))^{\cos(x)}$.

2. Find the critical numbers of $f(x) = x^3 + x^2 + x$.

3. Find the absolute maximum and absolute minimum values of $f(x) = x^3 - 3x + 1$ on $[0, 3]$

4. Find the absolute maximum and absolute minimum values of $f(x) = \frac{x}{x^2 + 4}$ on $[0, 3]$.