

Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~10 minutes / A

1. Determine the limit:

$$\lim_{x \rightarrow \pi^-} \cot x$$

2. Sketch the graph of the function, and use it to determine that values of a for which $\lim_{x \rightarrow a} f(x)$ exists.

$$f(x) = \begin{cases} 1 + \sin x & \text{if } x < 0 \\ \cos x & \text{if } 0 \leq x \leq \pi \\ \sin x & \text{if } x > \pi \end{cases}$$

Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~20 minutes / F

1. Determine the limit

$$\lim_{x \rightarrow 2\pi^-} x \csc x$$

2. Sketch the graph of the function, and use it to determine that values of a for which $\lim_{x \rightarrow a} f(x)$ exists.

$$f(x) = \begin{cases} 1 + x & \text{if } x < -1 \\ x^2 & \text{if } -1 \leq x < 1 \\ 2 - x & \text{if } x \geq 1 \end{cases}$$