

Name: \_\_\_\_\_

**Directions:** Use L'Hôpital's rule to find the limits. Show and explain your work.

This is a take-home quiz. It is due at the beginning of class on April 9.

1. 
$$\lim_{x \rightarrow 1} \frac{\ln |x|}{2 - 2x} =$$

2. 
$$\lim_{x \rightarrow 0} \frac{e^x - x - 1}{x^2} =$$

3. 
$$\lim_{x \rightarrow \infty} x \left( \tan^{-1}(x) - \frac{\pi}{2} \right) =$$

4. 
$$\lim_{x \rightarrow \infty} e^x \sin(e^{-x}) =$$