

Math 181

Quiz 13

Name: _____

October 29, 2002

muhahahaHAHA!!!

Show all work for credit.

Leave all answers as exact answers unless otherwise stated.

Do at least ten of the following circling the problem number of the ten you want me to grade.

Before you evaluate the limit, circle Y, R, or N to indicate; Yes, L'Hospital's rule can be used immediately, Rewriting in an equivalent form that would allow the use of L'Hospital's rule, or No, L'Hospital's rule does not apply. Then find the numerical answers for each of the limits.

1. Y R N $\lim_{x \rightarrow 0} \frac{e^x - 1}{\sin x}$

2. Y R N $\lim_{x \rightarrow \infty} \frac{x^{100}}{e^x}$

3. Y R N $\lim_{x \rightarrow 0^+} \frac{x}{\ln x}$

4. Y R N $\lim_{x \rightarrow 0} \frac{x e^x}{1 - e^x}$

5. Y R N $\lim_{x \rightarrow \infty} x e^{-x}$

6. Y R N $\lim_{x \rightarrow \infty} x \sin(\pi/x)$

7. Y R N $\lim_{x \rightarrow \infty} \frac{x^3}{e^{-x}}$

8. Y R N $\lim_{x \rightarrow (\pi/2)^-} (\cos x)^{\tan x}$

9. Y R N $\lim_{x \rightarrow 0^+} \frac{\sin x}{x^2}$

10. Y R N $\lim_{x \rightarrow 0^+} \left(\frac{1}{x} - \ln x \right)$

11. Y R N $\lim_{x \rightarrow \infty} (1 - 3/x)^x$

12. Y R N $\lim_{x \rightarrow -\infty} x + x^3$

13. Y R N $\lim_{x \rightarrow \infty} \ln x - \ln(1 + x)$

14. Y R N $\lim_{x \rightarrow \infty} \frac{\ln x}{x}$

15. Y R N $\lim_{x \rightarrow 0} \frac{\sin^{-1} 2x}{x}$

16. Y R N $\lim_{x \rightarrow 1} \frac{\ln x}{x - 1}$