AP Calculus AB
WS - L'Hopitals Rule
Spring 2018

Name_____

Date_____ **Per**_____

Evaluate the following limits using L'Hopitals Rule

1. $\lim_{x\to 2}\frac{x^2-4}{x-2}$
2. $\lim_{x\to\infty}\frac{3x^2-2x+1}{2x^2-5x}$
3. $\lim_{x\to 0}\frac{\sin 3x}{5x}$
4. $\lim_{x\to 2}\frac{\ln(2x-3)}{1-e^{x-2}}$
5. $\lim_{x\to 2^-}\frac{\sqrt{4-x^2}}{x-2}$
6. $\lim_{x\to 0^+}\frac{e^x-(1+x)}{x^3}$
7. $\lim_{x\to\infty}\frac{3x^2}{e^{2x}}$
8. $\lim_{x\to\infty}\frac{x}{\sqrt{x^2+1}}$
9. $\lim_{x\to\infty}\frac{\ln x}{x}$
10. $\lim_{x\to\infty}\frac{\ln x}{3e^{2x}}$
11. $\lim_{x\to 0^+}\frac{\ln(\sin x)}{\ln(\tan x)}$
12. $\lim_{x\to 0^+}\frac{1-\ln x}{e^{1/x}}$
13. $\lim_{x\to 0^+}\frac{\cot x}{\ln x}$
14. $\lim_{x\to 0}\frac{x-\tan^{-1}x}{x^3}$

1. 4
2. 3/2
3. 3/5
4. -2
5. $-\infty$
6. ∞
7. 0
8. 1
9. 0
10. 0
11. 1
12. 0
13. $-\infty$
14. 1/3