

4.7 L'Hospital's Rule

Calculus

Name: _____

CA #1

Find the following. Use L'Hospital's when possible.

1. $\lim_{x \rightarrow 3} \frac{x^2 - 2x + 1}{x - 3}$

2. $\lim_{x \rightarrow 0} \frac{3x^2}{e^x - 1 - x}$

3. $\frac{d}{dx} \frac{3x - 2}{5x + 1}$

4. $\lim_{x \rightarrow 6} \frac{7 - \sqrt{55 - x}}{x - 6}$

5. $\lim_{x \rightarrow 4} \frac{x^2 + 6x - 40}{4 - x}$

6. $\lim_{x \rightarrow 0} \frac{x + 1}{x^2 - 5x + 3}$

7. $\frac{d}{dx} \frac{e^x}{\tan(3x)}$

8. $\lim_{x \rightarrow 1} \frac{5 \ln x^2}{x^2 - 1}$

9. $\lim_{x \rightarrow 0} \frac{1 - \cos(4x)}{\cos(3x) - 1}$

Answers to 4.7 CA #1

1. Does not exist	2. 6	3. $\frac{13}{(5x+1)^2}$	4. $\frac{1}{14}$	5. -14
6. $\frac{3}{1}$	7. $e^x \cot 3x - 3e^x \csc^2 3x$	8. 5	9. $-\frac{9}{16}$	