

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

Score : \_\_\_\_\_

Teacher : \_\_\_\_\_

Date : \_\_\_\_\_

## L'Hopital's Rule

Find each limit.

$$1) \lim_{x \rightarrow 0} \frac{(x + 4)\sin(5x)}{(x - 1)\tan(4x)}$$

$$2) \lim_{x \rightarrow -5} \frac{x^3 + 2x^2 - 25x - 50}{x^3 + 11x^2 + 38x + 40}$$

$$3) \lim_{x \rightarrow 0} \frac{(x - 4)\sin(7x)\cot(-6x)}{(x - 4)}$$

$$4) \lim_{x \rightarrow \infty} \frac{-5 + \ln(6x)}{x^2 + 1}$$

$$5) \lim_{x \rightarrow -2} \frac{x^3 + 6x^2 + 12x + 8}{x^3 - 2x^2 - 5x + 6}$$

$$6) \lim_{x \rightarrow 0} \frac{\tan(6x)}{x}$$

$$7) \lim_{x \rightarrow 0^+} x (\ln x)^2$$

$$8) \lim_{x \rightarrow 0} \frac{\tan(-5x)}{x}$$



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$-\frac{7}{6}$

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6

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