

# Micro-teaching Session

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# 1 Script

This is my script for the *Micro-teaching recitation presentation* on Monday, October 3, 2016. I have attached a sample 15-minute quiz at the end the document.

## 1.1 L'Hôpital's rule

Students! This week, you have learned about l'Hôpital's rule and how to use it to evaluate limits of (a) quotients  $f/g$ , and limits of (b) products  $fg$  where in the first case we may have

PROBLEM (WebAssign, # 2). Find the limit. Use l'Hôpital's rule if appropriate. If there is a more elementary method, consider using it.

$$\lim_{x \rightarrow 0} \frac{\sin 2x}{\sin 3x}.$$

SOLUTION. ■

PROBLEM (WebAssign, # 3). Find the limit. Use l'Hôpital's rule if appropriate. If there is a more elementary method, consider using it.

$$\lim_{x \rightarrow 0} \frac{e^{7x} - 1 - 7x}{x^2}.$$

SOLUTION. ■

PROBLEM (WebAssign, # 4). Find the limit. Use l'Hôpital's rule if appropriate. If there is a more elementary method, consider using it.

$$\lim_{x \rightarrow \infty} \frac{(\ln(x))^2}{5x}.$$

SOLUTION. ■

PROBLEM (WebAssign, # 7). Find the limit. Use l'Hôpital's rule if appropriate. If there is a more elementary method, consider using it.

$$\lim_{x \rightarrow \infty} x \tan(5/x).$$

SOLUTION. ■

PROBLEM (WebAssign, # 8). Find the limit. Use l'Hôpital's rule if appropriate. If there is a more elementary method, consider using it.

$$\lim_{x \rightarrow 0} (\csc(x) - \cot(x)).$$

*SOLUTION.* ■

PROBLEM (WebAssign, # 9). Find the limit. Use l'Hôpital's rule if appropriate. If there is a more elementary method, consider using it.

$$\lim_{x \rightarrow 0} (1 - 8x)^{1/x}.$$

*SOLUTION.* ■

PROBLEM (WebAssign, # 10). Find the limit. Use l'Hôpital's rule if appropriate. If there is a more elementary method, consider using it.

$$\lim_{x \rightarrow \infty} x^{8/x}.$$

*SOLUTION.* ■

## 1.2 Sample Quiz