

## Part II of L' Hospital's Rule

Lesson 291 | Calculus AB | L'Hopital's rule

[https://www.youtube.com/watch?v=O\\_0Ab3uSy\\_k](https://www.youtube.com/watch?v=O_0Ab3uSy_k)

Original practice aligned to the saved video title.

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Show your reasoning.

**01**

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(10x)} - 1)/(9x)$  using L'Hospital's rule. Check its indeterminate form.

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**02**

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(13x)} - 1)/(8x)$  using L'Hospital's rule. Check its indeterminate form.

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**03**

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(4x)} - 1)/(6x)$  using L'Hospital's rule. Check its indeterminate form.

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Name: \_\_\_\_\_ Date: \_\_\_\_\_ Show your reasoning.

**04**

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(6x)} - 1)/(5x)$  using L'Hospital's rule. Check its indeterminate form.

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**05**

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(3x)} - 1)/(11x)$  using L'Hospital's rule. Check its indeterminate form.

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**06**

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(5x)} - 1)/(2x)$  using L'Hospital's rule. Check its indeterminate form.

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01

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(10x)} - 1)/(9x)$  using L'Hospital's rule. Check its indeterminate form.

Numerator and denominator both tend to 0. Differentiate separately:  $10e^{(10x)}/9$ . Its limit is  $10/9$ .

02

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(13x)} - 1)/(8x)$  using L'Hospital's rule. Check its indeterminate form.

Numerator and denominator both tend to 0. Differentiate separately:  $13e^{(13x)}/8$ . Its limit is  $13/8$ .

03

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(4x)} - 1)/(6x)$  using L'Hospital's rule. Check its indeterminate form.

Numerator and denominator both tend to 0. Differentiate separately:  $4e^{(4x)}/6$ . Its limit is  $2/3$ .

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04

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(6x)} - 1)/(5x)$  using L'Hospital's rule. Check its indeterminate form.

Numerator and denominator both tend to 0. Differentiate separately:  $6e^{(6x)}/5$ . Its limit is  $6/5$ .

05

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(3x)} - 1)/(11x)$  using L'Hospital's rule. Check its indeterminate form.

Numerator and denominator both tend to 0. Differentiate separately:  $3e^{(3x)}/11$ . Its limit is  $3/11$ .

06

Evaluate  $\lim_{x \rightarrow 0}$  of  $(e^{(5x)} - 1)/(2x)$  using L'Hospital's rule. Check its indeterminate form.

Numerator and denominator both tend to 0. Differentiate separately:  $5e^{(5x)}/2$ . Its limit is  $5/2$ .