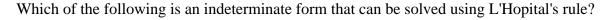
40 Lecture - MTH101

Important Mcqs



- a) 5/0
- b) 0/5
- c) 0/0
- d) 5/5

Answer: c) 0/0

L'Hopital's rule can only be used for:

- a) Limits of indeterminate forms
- b) Limits that converge to a finite value
- c) Limits that diverge to infinity
- d) None of the above

Answer: a) Limits of indeterminate forms

What is the general form of L'Hopital's rule?

a)
$$\lim x ? ? f(x) / g(x) = \lim x ? ? f'(x) / g'(x)$$

b)
$$\lim x ? c f(x) / g(x) = \lim x ? c f'(x) / g'(x)$$

c)
$$\lim x ? 0 f(x) / g(x) = \lim x ? 0 f'(x) / g'(x)$$

d) None of the above

Answer: b)
$$\lim x ? c f(x) / g(x) = \lim x ? c f'(x) / g'(x)$$

Which of the following is an example of an indeterminate form ? / ??

- a) $\lim x ? 0 \sin(x) / x$
- b) $\lim x ? ? e^x / x^2$

- c) $\lim x ? ? \ln(x) / x$
- d) None of the above

Answer: b) $\lim x ? ? e^x / x^2$

L'Hopital's rule can be applied:

- a) Once
- b) Twice
- c) Multiple times
- d) None of the above

Answer: c) Multiple times

Which of the following is an example of an indeterminate form 0 x ??

- a) $\lim x ? ? (x + 1) / (x 1)$
- b) $\lim x ? 0 (1 \cos(x)) / x^2$
- c) $\lim x ? ? x \ln(x)$
- d) None of the above

Answer: c) $\lim x ? ? x \ln(x)$

Which of the following is an example of an indeterminate form ? - ??

- a) $\lim x ? 0 (1 \cos(x)) / x^2$
- b) lim x ? ? x e^x
- c) $\lim x ? ? (x^2 + 1) / (x + 1)$
- d) None of the above

Answer: b) $\lim x ? ? x - e^x$

L'Hopital's rule fails to solve indeterminate forms when:

- a) The limit is not an indeterminate form
- b) The limit is a determinate form
- c) The limit does not exist

d) None of the above

Answer: c) The limit does not exist

Which of the following is an example of an indeterminate form 0/0?

a)
$$\lim x ? 1 (x - 1) / (x^2 - 1)$$

b)
$$\lim x ? ? (1 + 1/x)^x$$

c)
$$\lim x ? 0 \ln(x) / x$$

d) None of the above

Answer: a)
$$\lim x ? 1 (x - 1) / (x^2 - 1)$$

Which of the following is an example of an indeterminate form ? / ??

a)
$$\lim x ? 0 \sin(x) / x$$