40 Lecture - MTH101

Important Mcqs

Which of the following is an indeterminate form that can be solved using L'Hopital's rule?

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

b) lim x ? ? e^