44 Lecture - MTH101

Important Mcqs

Which of the following series is an alternating series?

- a. ? n=1 to ? 1/n^2
- b. ? n=0 to ? (-1)^n/n
- c. ? n=1 to ? 1/2^n
- d. ? n=1 to ? (n+1)/n^2
- Answer: b

What is the alternating series test used for?

- a. To determine if an alternating series converges
- b. To determine if a geometric series converges
- c. To determine if a power series converges
- d. To determine if a series is telescoping

Answer: a

Which of the following series converges conditionally?

- a. ? n=1 to ? (-1)^n/n
- b. ? n=1 to ? 1/n
- c. ? n=1 to ? (-1)^n/(2n+1)
- d. ? n=1 to ? $(-1)^n/(n^2+1)$
- Answer: d

Which of the following statements about a conditionally convergent series is true?

- a. The series diverges.
- b. The series converges absolutely.

- c. The series converges conditionally.
- d. The series converges but is not alternating.

Answer: c

Which of the following series is conditionally convergent?

- a. ? n=1 to ? (-1)^n/n^2
- b. ? n=1 to ? (-1)^n/(2n+1)
- c. ? n=1 to ? 1/2^n
- d. ? n=1 to ? n/(n+1)

Answer: b

If a series is conditionally convergent, which of the following must be true?

- a. The series is alternating.
- b. The series is divergent.
- c. The series converges absolutely.
- d. The series does not converge.

Answer: a

Which of the following is an example of a conditionally convergent series?

- a. ? n=1 to ? 1/n^2
- b. ? n=1 to ? (-1)^n/n
- c. ? n=1 to ? n!
- d. ? n=1 to ? (2n)!

Answer: b

Which of the following tests can be used to test for conditional convergence?

- a. Integral test
- b. Ratio test
- c. Comparison test

d. Alternating series test

Answer: d

Which of the following statements is true about a convergent alternating series?

- a. The series converges absolutely.
- b. The series converges conditionally.
- c. The series is divergent.
- d. The series is not alternating.

Answer: b

Which of the following is an example of an alternating series that converges conditionally?

- a. ? n=1 to ? 1/n^2
- b. ? n=1 to ? (-1)^n/(2n+1)
- c. ? n=1 to ? (-1)^n/(n^2+1)
- d. ? n=1 to ? n/(n+1)

Answer: c