

MathQuest: Series

Convergence Tests

1. For what values of p does the series $\sum_{n=1}^{\infty} 1/n^p$ converge?

- (a) This series converges for all values of p .
- (b) This series converges only if $p > 2$.
- (c) This series converges only if $p > 1$.
- (d) This series converges only if $p > 0$.
- (e) This series does not converge for any values of p .

2. Does the series $\sum_{n=1}^{\infty} \frac{100}{n^2+2}$ converge?

- (a) Yes, this series converges.
- (b) No, this series does not converge.
- (c) It is impossible to tell.

3. Does the series $\sum_{n=1}^{\infty} \frac{\ln(n)}{n}$ converge?

- (a) This series converges.
- (b) This series diverges.
- (c) It is impossible to tell.

4. Does the series $\sum_{n=1}^{\infty} \frac{n^3}{3^n}$ converge?

- (a) This series converges.
- (b) This series diverges.
- (c) It is impossible to tell.

5. Does the series $\sum_{n=1}^{\infty} \frac{n!}{(2n)!}$ converge?

- (a) This series converges.
- (b) This series diverges.
- (c) It is impossible to tell.

6. Does the series $\sum_{n=1}^{\infty} \frac{(-1)^n}{n}$ converge?

- (a) This series converges.
- (b) This series diverges.
- (c) It is impossible to tell.