Series

Absolute Convergence

1. $\sum_{n=1}^{\infty} \frac{(-1)^n}{\sqrt{n}}$

2. $\sum_{n=1}^{\infty} \frac{(-1)^n n^{100}}{4^n}$

3. $\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{\ln(n^n)}$

4. $\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{\ln^n(n)}$

5. $\sum_{n=1}^{\infty} (-1)^n \frac{n}{\sqrt{n^3+2}}$

6. $\sum_{n=1}^{\infty} (-1)^{n+1} \frac{3^n n^6}{n!}$

7. $\sum_{n=1}^{\infty} \frac{(-1)^n}{n^{\frac{2}{3}}}$

8. $\sum_{n=1}^{\infty} \frac{(-3)^{n-1}}{4^n}$

9. $\sum_{n=1}^{\infty} (-1)^n \left(\frac{\ln(n)}{\ln(n^2)} \right)^n$

10. $\sum_{n=0}^{\infty} \frac{\cos(n\pi)}{5^n}$

Answers

Series

Absolute Convergence

1. converges

2. converges $\left(\text{absolutely}\right)$

3. converges

4. converges

5. converges

6. converges $\left(\text{absolutely}\right)$

7. converges

8. converges

9. converges

10. converges