

Determine if the following series converge absolutely, converge conditionally, or diverge.

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

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

3.
$$\sum_{j=3}^{\infty} \frac{\cos(j)2^j}{j5^j}$$

4.
$$\sum_{k=1}^{\infty} \frac{k}{e^k}$$