

DETERMINE THE CONVERGENCE OR DIVERGENCE OF THE SERIES.

1.
$$\sum_{n=1}^{\infty} \frac{5}{n + \sqrt{n^2 + 4}}$$

2.
$$\sum_{n=0}^{\infty} \frac{n^{k-1}}{n^k + 1}, k > 2$$

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

4.
$$\sum_{n=0}^{\infty} \frac{(-1)^n}{n!}$$

5. Use the Integral Test to determine the convergence or divergence of the series

$$\sum_{n=2}^{\infty} \frac{\ln n}{n^3}$$