

Series Worksheet

May 1, 2013

Determine whether the following series converge and EXPLAIN why it converges or diverges:

1. $\sum_{n=1}^{\infty} \frac{1}{n^3 + 1}$.

2. $\sum_{n=12}^{\infty} \frac{1}{(\ln n)^3 (\ln (\ln (n)))}$.

3. $\sum_{n=1}^{\infty} \frac{n^3}{(n-2)^5 + 12}$.

4. $\sum_{n=1}^{\infty} \frac{2^n}{n!}$.

5. $\sum_{n=1}^{\infty} \left(1 + \frac{1}{n^3}\right)$.

6. $\sum_{n=1}^{\infty} n$.

7. $\sum_{n=1}^{\infty} e^{-n}$.

8. $\sum_{n=1}^{\infty} \frac{1}{\pi^2}$.