

Instructions: Show Your Work!

Test for convergence

1. (3 pts)

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

2. (3 pts)

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

3. (3 pts)

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

4. (3 pts)

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