



2nd Quiz

Student Name in Arabic:

Section:

1- Test the following series

$$\sum_{n=2}^{\infty} \frac{\tan^{-1} n}{1+n^2} \quad \sum_{n=1}^{\infty} \frac{1}{n3^n} \quad \sum_{n=1}^{\infty} \left(\frac{1}{2}\right)^n \left(1+\frac{1}{n}\right)^{n^2}$$

2- Classify the following series

$$\sum_{n=1}^{\infty} \frac{(-1)^{n-1} n^2}{n^2+3} \quad \sum_{n=1}^{\infty} \frac{2n(-1)^{n-1}}{4n^2-3} \quad \sum_{n=1}^{\infty} \frac{(-1)^{n-1} (n+1)}{5^n}$$

3- Find interval of convergence

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