
Please show your work!

1) Test the series for convergence or divergence

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

b) $\sum_{n=1}^{\infty} \left(\frac{n}{n+1} \right)^{n^2}.$

c) $\sum_{n=1}^{\infty} \frac{1}{n + n \cos^2 n}$