

Show all work clearly and in order. Justify your answers. You have 15 minutes for this quiz.

PROBLEM ONE Determine if the following series converge or diverge.

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

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

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