

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

PROBLEM ONE Determine if the following series converges or diverges. If it converges, find its value.

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

PROBLEM TWO Determine if the following series converges or diverges:

$$\sum_{n=1}^{\infty} \frac{\ln(n)}{n}$$