

Name:

Student ID#:

SR#

Q1) Determine **one** of the following series whether it converges or diverges. Justify your answer.

$$(a) \sum_{n=1}^{\infty} \frac{\sqrt{n^4 + 1}}{n^3 + 2n^2}$$

$$(b) \sum_{n=2}^{\infty} \frac{1}{n\sqrt{\ln n}}$$

Q2) Find the smallest number of terms of the following series that we need to add so that $|\text{error}| < 0.0001$.

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