

Name:

Student ID#:

SR#

Q1) Determine whether the series is convergent or divergent. If it is convergent find the sum.

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

Q2) Determine whether the series is absolutely convergent, conditionally convergent or divergent. Give reasons for your answers.

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

ii) $\sum_{n=1}^{\infty} \frac{\sin(2n)}{1 + 2^n}$

iii) $\sum_{n=1}^{\infty} (-1)^n \frac{(2n)!}{2^n n! n}$

