

MA126 Quiz 8

**Name:**

- 1) (8 pts) Determine whether the sequence is convergent or divergent.  
If it is convergent, find its limit.

$$a_n = \frac{3 + 5n^2}{n + n^2}$$

- 2) (8 pts) Determine whether the sequence is convergent or divergent.  
If it is convergent, find its limit.

$$a_n = \frac{\ln n}{n}$$

**(OVER)**

3) (9 pts) Determine whether the series is convergent or divergent.  
If it is convergent, find its sum.

$$3 - \frac{10}{3} + \frac{20}{9} - \frac{40}{27} + \cdots$$