Math 102: Calculus II Semester 111 Quiz 5

Name: …… ID: …… Section: 07 Serial: ……..

Please show your work!

1) Show that the following series is convergent or divergent. If it is convergent, find its sum.

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

b) $\sum_{j=2}^{\infty} \frac{j^2}{j^2-1}$.

2) Find the sum of the series $\sum_{n=1}^{\infty} \frac{1}{n^5}$ correct to three decimal places.

3) Determine whether the series $\sum_{n=1}^{\infty} \frac{\tan^{-1} n}{n^{1.1}}$ converges or diverges