

May 18, 2009

QUIZ#4 Math102, sec 5-25-3

Net Time Allowed: 35 minutes

Name:

ID # :

section:

**Exercise1:**

Evaluate the integral  $\int \frac{1}{1 - \sin x + \cos x}$  [Hint: you may use the substitution  $t = \tan \frac{x}{2}$ ].

**solution:**

**Exercise2:**

Determine whether the Sequence  $\{\frac{\sin(3n)}{3n+1}\}_{n=1}^{+\infty}$  converges or diverges. If it converges, find its limit.

**solution:**

**Exercise3:**

Determine whether the following series are convergent or divergent. Justify your answer.

a)-  $\sum_{n=1}^{\infty} n \sin \frac{1}{n}$

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

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