KFUPM | Term 122 | Date: 28/4/2013

Mathematics & Statistics | MATH 102 | Duration: 25 minutes

Quiz# 5

Name: ID #: Section 28 Serial #:

1. Determine whether the integral $\int_0^1 \frac{dx}{(x-1)^{2/3}}$ converges or diverges.

2. Determine whether the sequence $\left\{n\sqrt[n]{e}-n\right\}$ converges or diverges and find its limit if it is convergent.

3. Test each of the following series for convergence or divergence:

   a. $\sum_{n=1}^{\infty} \frac{1}{n\sqrt[n]{n}}$.

P.T.O. →

b. $\sum_{n=2}^{\infty} \frac{cos^2 n}{n^2+2n+1}$.

c. $\sum \left(1+\frac{1}{k}\right)^{-k}$.

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4. Find the value of *x* for which $\sum_{n=0}^{\infty} 4^n(3+x)^{-n}$ converges to 2.

With My Best Wishes