KFUPM | Term 143 | Date: 16/6/2015

Mathematics & Statistics | MATH 102 | Duration: 20 minutes

Quiz# 1

Name: ID #: Section: Serial #:

1. Evaluate each of the following integrals (if possible!):

   a. $\int_{-1}^{8}\left(5-4x^{1/3}+3x^{5/4}\right)\,dx$.

   b. $\int_{0}^{\frac{\pi}{3}}\dfrac{\sin\theta+\tan^2\theta\ \sin\theta}{\sec^2\theta}\,d\theta$.

   c. $\int_{1}^{4}\dfrac{3x^4-3x^2-7x+18}{2x^3+6x^2-20x}\,dx$.

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2. Show that $\int_{0}^{\frac{\pi}{2}} x\sin x\,dx \le \dfrac{\pi^2}{8}$ without evaluating the integral.

P.T.O. →

3. Find $\frac{dy}{dx}$ if $y = \int_{\cos x}^{5x} \cos(u^2)\, du$.

4. Find the number b such that the line $y = b$ bisects the area under the curve $y = \frac{1}{x^2}$, $1 \leq x \leq 4$.

With My Best Wishes