KFUPM | Term 181 | Date: 11/11/2018

Mathematics & Statistics | MATH 102 | Duration: 40 minutes

Class Test 2

Name: ID #: Section: 4 Serial #:

1. A solid S is generated from revolving the region, bounded by $y = 3 + 2x - x^2$ and $y = 0$ about the y–axis. Set up (but do not evaluate) the integral that gives the volume of the solid S. Show your detailed solution.

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2. Find the average value of the function $y = \csc(x)\cot(x)$ where $\frac{\pi}{3} \leq x \leq \frac{8\pi}{3}$.

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3. Evaluate (if possible) $\int (2x^2 + 1)e^{x^2}\, dx$.

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4. Describe the solid (in detail) which its volume is given by the integral
$\int_0^{\frac{\pi}{4}} 2\pi(\pi - x)(\cos x - \sin x)\ dx$.

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5. Evaluate (if possible) $\int \frac{\sec x}{\ln(\sec x + \tan x)}\ dx$.

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6. Evaluate (if possible) $\int_{-2}^{0} \frac{dx}{1+2e^{x}-e^{-x}}$.

With My Best Wishes