King Fahd University of Petroleum and Minerals

Department of Mathematics and Statistics **Spring Semester (Term 172)**

Quiz 1 MATH 102 Dr. Taleb Alkurdi

Name_____ ID_____ Section Number_____

Important Note: Please show your work in order to get the full grade. There is only one point for the final answer and the rest will be for the details of the work.

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

Graph the integrand and use areas to evaluate the integral.

1) $\int_{-7}^{7} \sqrt{49 - x^2}\, dx$

Use the substitution formula to evaluate the integral.

2) $\int_{0}^{\pi/16} (1 + e^{\tan 4x}) \sec^2 4x\, dx$

Find the formula and limit as requested.

3) For the function $f(x) = 6x^2 + 2$, find a formula for the upper sum obtained by dividing the interval [0, 3] into n equal subintervals. Then take the limit as $n \to \infty$ to calculate the area under the curve over [0, 3].

Answer Key
Testname: QUIZ1_CAL2_172

1) $\frac{49}{2}\pi$

2) $\frac{e}{4}$

3) $6 + \frac{324n^3 + 486n^2 + 162n}{6n^3}$; Area = 60