

King Fahd University of Petroleum & Minerals
Department of Mathematics and Statistics
Math102/Calculus II
Quiz 1
Two Problems ¹

Problem 1 (5 points)

Express the following limit as a definite integral.

$$\lim_{n \rightarrow \infty} \frac{2}{n} \sum_{i=1}^n \frac{2}{1 + (\frac{i}{n})^2}. \quad (\text{B level})$$

Problem 2 (5 points)

Find the derivative of $g(x) = \int_{1-2x}^{1+2x} t \sin(t) \partial t$. (C level)

Problem 3 (5 points)

Use substitution to evaluate the indefinite integral.

(a) $\int u\sqrt{1-u^2} \partial u$. (B level)

(b) $\int \frac{\cos(x)}{\sin^2(x)} \partial x$. (A level)

¹The quiz lasts 30 minutes.