Sultan Qaboos University
Department of Mathematics and Statistics

Math2108 Spring 2011

Quiz 1 Time: 20 minutes

Name:. . . . . Section: . . . . . Number. . . . . .

Circle the choice that gives a BEST FIT for the answer in Question Q1 . *(3 points)*

Q1: The area of the region bounded between the curves of $y = x^3, y = 3 - 2x$ and $y = 0$ is given by

(a) $\int_0^{\frac{3}{2}}(x^3 - (3 - 2x))dx$

(b) $\int_0^1(\frac{3}{2} - \frac{1}{2}y - y^{\frac{1}{3}})dy$

(c) $\int_0^1 x^3dx + \int_1^{\frac{3}{2}}(3 - 2x)dx$

(d) the answers in (b) and (c) are both correct.

In questions 2 and 3, show your complete, mathematically correct and neatly written solution. *(5+7 points)*

Q2: Find the volume of the cone with cross sectional area $A(y) = r^2(1 - \frac{1}{h}y)^2,\ 0 \leq y \leq h$.

Q3: Sketch the region bounded by $y = 2 - x, x = 0$ and $y = 0$, then answer each of the following:

(i) Compute the volume of the solid formed by revolving the region about the line $x = 3$.

(ii) Compute the volume of the solid formed by revolving the region about the line $y = 3$.

Good Luck