King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 333 – Term 181 – Quiz 1

Name:
Student ID #:
Section #:

Question 1. Let $r = x\mathbf{i} + y\mathbf{j} + z\mathbf{k}$. $a = a_1\mathbf{i} + a_2\mathbf{j} + a_3\mathbf{k}$ is a constant vector. Show that $div[(r \cdot r)a] = 2(r \cdot a)$

QUESTIONS 2 IS ON THE BACK OF THE PAGE.

Question 2. Evaluate

$$\int_C xy^2\,ds$$

where C is the quarter circle defined by $x = 4\cos t$, $y = 4\sin t$, $0 \leq t \leq \pi/2$.