King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 301 – Term 172 – Quiz 2

Name:
Student ID #:
Section #:

Question 1. Use Stokes' theorem to evaluate the line integral

$$\oint_C -y^2\,dx + x\,dy + z^2\,dz$$

where C is the curve formed by intersection of the cylinder $x^2+y^2=1$ with the plane $y+z=2$.

QUESTIONS 2 IS ON THE BACK OF THE PAGE.

Question 2. Use divergence theorem to evaluate

$$\iint_S (x^2 z^3\,\mathbf{i} + 2xyz^3\,\mathbf{j} + xz^4\mathbf{k})\,dS$$

where S is the surface of the box defined by $-1 \leq x \leq 1$, $-2 \leq y \leq 2$ and $-3 \leq z \leq 3$.