King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 301 – Term 181 – Quiz 2

Name:
Student ID #:
Section #:

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

$$\oint_C -2y\,dx + 3x\,dy + 10z\,dz$$

where C is the curve formed by intersection of the cylinder $(x-2)^2 + (y-1)^2 = 9$ with the plane $z = 4$.

QUESTIONS 2 IS ON THE BACK OF THE PAGE.

Question 2. Use divergence theorem to find the outward flux of $F = x^2\mathbf{i} - 2xy\mathbf{j} + 3z\mathbf{k}$ over the surface $S : x^2 + y^2 + z^2 = 6$.