King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
MATH 201, Sections 8 and 11(041)
Quiz -5

Time: 15 Minutes Marks: 9

Instructor : Dr. Abdul Rahim Khan

Version (a)

Use double integral to find area of the region bounded by the graphs of
$x = y^3, \quad x + y = 2 \quad$ and $y = 0$

Version (b)

Evaluate: $\int_0^4 \int_0^{x^2} x^3 \sin xy \, dy \, dx$

Version (c)

Use Lagrange multipliers to find the extrema of $f(x, y, z) = x + y + z$ subject to the constraint $x^2 + y^2 + z^2 = 25$.

Version (d)

Find volume of the solid bounded by the graphs of the
cylinder $x^2 + y^2 = 4$ and the planes $y + z = 4$ and $z = 0$.