

King Fahd University of Petroleum and Minerals  
Department of Mathematics and Statistics  
Math 201 – Term 182 – Quiz 5

Name:

Student ID #:

Section #: 13

**Question 1.** Use Lagrange multipliers to find maximum and minimum values of the function

$$f(x, y, z) = x - 2y + 5z$$

on the sphere  $x^2 + y^2 + z^2 = 30$

**SEE BACK OF THE PAGE FOR QUESTION 2**

**Question 2.** Evaluate  $\int_0^1 \int_{\sqrt{y}}^1 \sqrt{x^3 + 1} \, dx \, dy$ .