King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

Math 131 (Term 163) - Quiz 2

Student Name_____ **Student ID:** _____

Exercise 1 [5 points]

Use the geometric approach to maximize $Z = y - x$ subject to $\begin{cases} x \leq 3 \\ x + 3y \geq 6 \\ x - 3y \geq -6 \\ x, y \geq 0 \end{cases}$

Exercise 2 [5 points]

Solve the following system by using matrix reduction $\begin{cases} w + x + 2y + 7z = 0 \\ w - 2x - y + z = 0 \\ w + 2x + 3y + 9z = 0 \\ 2w - 3x - y + 4z = 0 \end{cases}$

Coefficient Matrix:

New System:

Reduced Matrix: (Show your work on the back of this page)

Solution:

w =

x =

y =

z =