King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 002 - Term 142
Recitation (9.2)

Question 1: Using Gauss-Jordan Method, solve the following systems of equations:

(a) $\begin{cases} 4x - 2y + z = 13 \\ x + y + z = -2 \\ 4x + 2y + z = 1 \end{cases}$

(b) $\begin{cases} x - y + 2z + w = 4 \\ y + z = 3 \\ z - w = 2 \\ x - y = 0 \end{cases}$

Answer: (a): The solution of the system is $(2, -3, -1)$.

Answer: (b): The Solution set is $SS = \{(1, 1, 2, 0)\}$

Question 2

Find k so that the three lines: $y = 2x - 3$; $y = 5x + k$ and $y = 7 - 3x$ intersect at one point.

Answer: $\boxed{k = -9}$

Question 3

If $\begin{bmatrix} 3 & 3 & 4 & | & -3 \\ 4 & 4 & 2 & | & 1 \end{bmatrix}$ is the augmented matrix of a linear system then the solution set of the system is

A) $\left\{ \left(1 - c, \ c, \ -\dfrac{3}{2} \right) \right\}$, where c is any real number.

B) $\left\{ \left(4 - 2c, \ 4 - 2c, \ c \right) \right\}$, where c is any real number.

C) $\left\{ \left(4, \ 3, \ -\dfrac{3}{2} \right) \right\}$

D) $\varnothing$

E) $(-\infty, \infty)$

Question 4: The all values of k for which the system $\begin{cases} x + y = 5 \\ y + z = 4 \\ x + 2kz = 1 \end{cases}$ has only one solution is

A) $(-\infty, 2) \cup (2, \infty)$

B) $\left(-\infty, -\dfrac{1}{2} \right) \cup \left(-\dfrac{1}{2}, \infty \right)$

C) $\left\{ -\dfrac{1}{2} \right\}$

D) $\varnothing$

E) $(-\infty, \infty)$