Math 2331 **Quiz # 1**

January 16, 2014

Solve the system $\begin{aligned} x+y+z &= 4 \\ -x-y+z &= 0 \\ x+4y+z &= 1 \end{aligned}$.

1. Then x = : a. 2 b. 1 c. 0 d. -1 e. 3 f. none of these

2. And y = : a. 2 b. 1 c. 0 d. -1 e. 3 f. none of these

3. And z = : a. 2 b. 1 c. 0 d. -1 e. 3 f. none of these

Solve the system $\begin{aligned} 3x_1 - 2x_2 + x_3 - 2x_4 + 2x_5 &= 0 \\ 6x_1 - 4x_2 + 3x_3 - x_4 + x_5 &= 0 \end{aligned}$.

4. The pivot variables are:
a. x_1, x_2 b. x_1, x_3 c. x_1, x_4 d. x_2, x_3, x_5 e. x_2, x_3, x_4 f. none of these

5. The free variables are:
a. x_2, x_4 b. x_2, x_3 c. x_2, x_5 d. x_2, x_4, x_5 e. x_2, x_3, x_4 f. none of these

6. The number of pivots is:
a. 1 b. 2 c. 3 d. 4 e. 5 f. none of these

7. If the free variables are all 0, then x_1 = :
a. 0 b. 3/2 c. 1/3 d. 4. e. 1 f. none of these

8. A system with augmented matrix $\begin{bmatrix} 1 & 1 & 1 & 1 \\ 0 & 1 & 1 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}$ is:
a. Consistent b. Inconsistent c. Can't determine d. ?? e. ?? f. none of these

9. A system **Ax = b** in which **A** has reduced echelon form: $\begin{bmatrix} 1 & 1 & 1 \\ 0 & 0 & 0 \end{bmatrix}$

a. Has no solution for some choices of **b.**
b. Has infinitely many solutions for every choice of **b**.
c. Has a unique solution for every choice of **b**.
d. ??
e. ??
f. None of these.

10. A system $\mathbf{Ax} = \mathbf{b}$ in which $\mathbf{A}$ has reduced echelon form: $\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \end{bmatrix}$

a. Has no solution for some choices of **b.**
b. Has infinitely many solutions for every choice of **b**.
c. Has a unique solution for every choice of **b**.
d. ??
e. ??
f. None of these.