

MATH 1210 Assignment #4

Due: November 10 2008, In Class
NO LATE ASSIGNMENTS WILL BE ACCEPTED

Reminder: all assignments *must* be accompanied by an honesty declaration. This should be stapled to the FRONT of your assignment. Include your lab section.

Show all your work. Unjustified answers will receive little or no credit. Use single sided white $8\frac{1}{2} \times 11\frac{1}{2}$ paper, staple the top left corner.

1. Solve the following systems using Gaussian elimination:

$$\begin{array}{rclcrcl} & x_1 & - & x_2 & + & x_3 & = & 1 \\ \text{(a)} & 4x_1 & + & 2x_2 & + & x_3 & = & -2 \\ & 9x_1 & + & 3x_2 & + & x_3 & = & 1 \end{array}$$

$$\begin{array}{rclcrcl} & 3x_1 & - & x_2 & + & x_3 & + & 2x_4 & = & -2 \\ \text{(b)} & x_1 & + & 2x_2 & - & x_3 & + & x_4 & = & 1 \\ & -x_1 & - & 3x_2 & + & 2x_3 & - & 4x_4 & = & -6 \end{array}$$

$$\begin{array}{rclcrcl} & x & & & + & 2z & = & 1 \\ \text{(c)} & 2x & + & y & + & 5z & = & 2 \\ & x & - & y & + & z & = & 4 \end{array}$$

2. Solve the following systems using Gauss Jordan Elimination:

$$\begin{array}{rclcrcl} & x_1 & + & 2x_2 & + & x_3 & = & 1 \\ \text{(a)} & 2x_1 & + & 3x_2 & + & 2x_3 & = & 0 \\ & x_1 & + & x_2 & + & x_3 & = & 2 \end{array}$$

$$\begin{array}{rclcrcl} & 3x_1 & - & 3x_2 & + & x_3 & + & 3x_4 & = & -3 \\ \text{(b)} & x_1 & + & x_2 & - & x_3 & - & 2x_4 & = & 3 \\ & 4x_1 & - & 2x_2 & & & + & x_4 & = & 0 \end{array}$$

$$\begin{array}{rclcrcl} & 4x & - & 3y & - & 4z & = & -2 \\ \text{(c)} & -4x & + & 2y & + & z & = & -4 \\ & -x & - & 3y & + & z & = & -4 \end{array}$$

3. Given the following augmented matrix of a system of linear equations, for what value(s) of k is system consistent?

$$\left[\begin{array}{ccc|c} 1 & 2 & -1 & k \\ 2 & 3 & -2 & 2 \\ -1 & -1 & 1 & 3 \end{array} \right]$$