**CCP** **Fall 2011**
**Math 151** **Dr. Yun Yoo**

# Attendance Quiz 15

Review for exam 2

Name: _____ Date: _____

1. Consider the system

$$x - 2y = 8$$
$$3x + 5y = 4$$

(a) Solve the system using Gauss-Jordan Elimination Method.
(b) Write a matrix equation that is equivalent to the system of linear equation.
(c) Let $A$ be the coefficient matrix from part (b). Find the inverse of $A$.
(d) Verify that $AA^{-1} = I$.
(e) Solve the system using the inverse found in part (c). ( $X = A^{-1}B$ )

2. Consider the system

$$x + 2y = -4$$
$$3x + 5y = -9$$

(a) Solve the system by Gauss-Jordan elimination
(b) Solve the system by finding the inverse of the coefficient matrix.

3. Let $A = \begin{bmatrix} 1 & 0 & 2 \\ -1 & 1 & 0 \\ 0 & 0 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 & 3 \\ -1 & 1 & 0 \\ 0 & 2 & -2 \end{bmatrix}$, $C = \begin{bmatrix} 1 \\ -2 \\ 3 \end{bmatrix}$, $E = \begin{bmatrix} -3 & 2 & 2 \end{bmatrix}$,

$D = \begin{bmatrix} 0 & 2 & 0 \\ -1 & 0 & 3 \end{bmatrix}$.

Compute, if possible.

(a) $AB$ (b) $AC$ (c) $CE$
(d) $B^2$ (e) $DA$

4. Let $A = \begin{bmatrix} -1 & 0 & 0 \\ 0 & 4 & 0 \\ 0 & 0 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 4 & 0 \\ -1 & 0 & 3 \end{bmatrix}$.

Compute, if possible.

(a) $A - 3B$ (b) $B^T$ (c) $AB^T$

5. Solve for $u$, $x$, $y$, and $z$ in the matrix equation.

$$\begin{bmatrix} 1 & x \\ 2y & 3 \end{bmatrix} - 3\begin{bmatrix} 1 & -2 \\ 0 & -3 \end{bmatrix} = \begin{bmatrix} 2z & 1 \\ 4 & u \end{bmatrix}$$