Assignment 1

Due Date: 29 SEP 2015

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Determine whether the following statements are true or false:

1. A 5 × 6 matrix has six rows. False
2. A diagonal matrix is upper and lower triangular matrix at the same time. True
3. The matrix is symmetric. True
4. If and are matrices of the same size, then. false
5. If and are square matrices of same size, then False
6. If A is a Square matrix with two proportional rows then . True

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For Each Question, Choose the Correct Answer from the Multiple-Choice List.

1. Determine whether the matrix below is in

a)row echelon form b) reduced row echelon form c) both

1. If is a matrix and is a matrix, then is

a) b)

c)

1. The quantity , is equal to

a) b) c)

1. The inverse of is

a) b) c)

1. If A= , then the minor of is:

a) b) c)

1. If the determinant of ,then

a) b) c)

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Solve the following questions:

1. a. If and

AT=

+

+ =

b. Find the trace of C.

tr(c) = 1+7=8

1. a. Apply Elementary row operations to find the inverse of .

First step: find

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1. Use the result of to solve the system of equations:

.

X1 = 17 x2 = 12 x3=

3) If A= and . Evaluate the determinants of the following matrices:

B = ; C= ; and

D=

* B is the matrix resulted when the second row of A is multiplied by 2. Using Theorem2.2.3(a), we have |B| = 3|A| = 2206
* C is the matrix resulted when the second and third rows of A are interchanged. Using Theorem2.2.3(b), we have |C| = – |A| = –103
* D is the matrix resulted when the first row of A multiplied by 2 and added to the third row of A. Using Theorem2.2.3(c), we have |D| = |A| = 103

4)Solve the following system of equations using Cramer’s rule.

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|A| = 1 -2 +3

= 1(7) -2 (2) +3 (-17) = -48

|A1| =17-2 +3

= 17(7) -2(16) +3(-45) = -48

|A2| = 1 -17 +3

= 1(16) -17(2) +3(-26) = -96

|A3| =1-2 +17

= 1(45) -2(-26) +17(-17) = -192

(1,2,4)