Lecture #002 Pages (7 - 10)

Due Feb 1 at 5pm   **Points** 10   **Questions** 4

Available Jan 25 at 12am - Feb 8 at 11:59pm   **Time Limit** None

Allowed Attempts Unlimited

This quiz was locked Feb 8 at 11:59pm.

Attempt History

	Attempt	**Time**	**Score**
LATEST	**Attempt 1**	9 minutes	10 out of 10

Score for this attempt: **10** out of 10
Submitted Jan 28 at 5:36pm
This attempt took 9 minutes.

Question 1   2.5 / 2.5 pts

Suppose X and Y are matrices, XY and YX can both be computed.

TRUE/FALSE: XY is always equal to YX

c001.p013.00.q006

   ◯ True

Correct!   ◉ False

Question 2   2.5 / 2.5 pts

Let X be a matrix given by

```
          [,1] [,2] [,3] [,4] [,5]
[1,]       9    9    4    5    6
[2,]       8    4    9    1    4
[3,]       3    2   10    5    3
```

Does X have an inverse?

Enter 0 - if it does not have an inverse.
Enter 1 - if it does have an inverse.

c001.p014.00.q007

Correct!

```
0
```

orrect Answers   0 (with margin: 0)

Question 3   2.5 / 2.5 pts

Suppose your are given a random vector (2x1 matrix)

$$X = \begin{bmatrix} X_1 \\ X_2 \end{bmatrix} \left(\text{or using matrix notation } \begin{bmatrix} X_{1,1} \\ X_{2,1} \end{bmatrix} \right).$$

The following facts are known:

$E(X_1)=9,\ E(X_2)=9.$

A linear transformation of X is defined by

$$Y = \begin{bmatrix} 1 & 2 \\ 3 & 1 \\ 2 & 0 \end{bmatrix} X + \begin{bmatrix} 0 \\ 1 \\ 4 \end{bmatrix}$$

Determine $E(Y_3)$ (or using matrix notation $E(Y)_{3,1}$)

c002.p017.00.q03

Correct!

```
22
```

correct Answer   22

Question 4   2.5 / 2.5 pts

Suppose you are given a random vector (n x 1 matrix)

$$X = \begin{bmatrix} X_1 \\ X_2 \\ \vdots \\ X_n \end{bmatrix} \left(\text{or using matrix notation} \begin{bmatrix} X_{1,1} \\ X_{2,1} \\ \vdots \\ X_{n,1} \end{bmatrix} \right) \text{ where n=3.}$$

The variance/covariance matrix V(X) is given below. What is the missing value?

10.0	8.58	4.09
	9.7	8.5
4.09	2.74	9.598

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Correct!

    8.58

correct Answer   8.58

Quiz Score: **10** out of 10