

**(081) Math 131: Finite Mathematics.Quiz TWO(Ch:5,7&9)Jan. 21, 2009**

**Dr. Latif and Dr. Raja Latif and Dr. Muhammad Latif and Dr. Abdul Latif**

**Contents**

**Marks: 40; Time: 30 Minutes**

**NAME:.....**

**I.D.#:**

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**SERIAL# SECTION #: (check one)**

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**NOTE: SHOW ALL STEPS OF THE SOLUTION.**

Q.1. 170SM29. (Marks : 10). Sketch the graph of the following linear system of inequalities. Shade the feasible region and find the corner points of it.

Then mark TRUE (✓) OR FALSE (✓) each of the following Statements.

You can make maximum Six statements to be True and Maximum Six statements to be false.

$$\left\{ \begin{array}{l} x + y \geq 2 \\ x + y \leq 8 \\ 2x + y \leq 10 \\ x \geq 0 \ \& \ y \geq 0 \end{array} \right.$$

1.  TRUE  or  FALSE  $(0, 2)$  and  $(2, 0)$  are corner points.

2.  TRUE  or  FALSE  $(2, 0)$  and  $(5, 0)$  are corner points.

3.  TRUE  or  FALSE  $(5, 0)$  and  $(8, 0)$  are corner points.

4.  TRUE  or  FALSE  $(8, 0)$  and  $(2, 6)$  are corner points.

5.  TRUE  or  FALSE  $(2, 6)$  and  $(0, 10)$  are corner points.

6.  TRUE  or  FALSE  $(2, 6)$  and  $(0, 8)$  are corner points.

7.  TRUE  or  FALSE  $(0, 8)$  and  $(0, 2)$  are corner points.

8.  TRUE  or  FALSE  $(0, 0)$  and  $(2, 0)$  are corner points.

9.  TRUE  or  FALSE  $(5, 0)$  and  $(0, 10)$  are corner points.

10.  TRUE  or  FALSE *The* Feasible region has exactly five corner points.

Q.2. (Marks: 10). Use the Pivot entry  $\boxed{1}$  in the second row and second column to transform the following tableau into a new equivalent tableau by using elementary row operations.

$$\left[ \begin{array}{cccccc|c} x & y & z & s & t & u & Z & : & ct \\ 4 & 1 & 6 & 1 & 0 & 0 & 0 & : & 60 \\ 3 & 1 & 2 & 0 & 1 & 0 & 0 & : & 20 \\ 6 & 1 & 9 & 0 & 0 & 1 & 0 & : & 30 \\ \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots \\ -4 & -6 & -3 & 0 & 0 & 0 & 1 & : & 0 \end{array} \right]$$

ELEMENTARY ROW OPERATIONS:

$$\left[ \begin{array}{cccccc|c} x & y & z & s & t & u & Z & : & ct \\ A & 0 & D & 1 & -1 & 0 & 0 & : & K \\ 2 & 1 & 3 & 0 & 1 & 0 & 0 & : & 20 \\ B & 0 & E & 0 & -1 & 1 & 0 & : & L \\ \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots \\ C & 0 & F & 0 & G & 0 & 1 & : & M \end{array} \right]$$

Find the values of the constants:

Constants	VALUE	Check( $\checkmark$ )
A $\rightarrow =$		
B $\rightarrow =$		
C $\rightarrow =$		
D $\rightarrow$		
E $\rightarrow =$		
F $\rightarrow =$		
G $\rightarrow =$		
K $\rightarrow =$		
L $\rightarrow =$		
M $\rightarrow =$		

Q.3. (Marks: 5). 126Rolf75TB. Ericks invested some money at 8 % compounded quarterly. At the end of 5 years her investment had grown to \$ 5463.30.

Find the initial investment that belongs to the interval:

You must have to write Solution and Answer:

\_\_\_\_\_ Dollars.

Constants	VALUE	( $\checkmark$ )
A $\rightarrow =$	(100, 1000]	
B $\rightarrow =$	(1000, 1500]	
C $\rightarrow =$	(1500, 2000]	
D $\rightarrow$	(2000, 2500]	
E $\rightarrow =$	(2500, 3000]	
F $\rightarrow =$	(3000, 3500]	
G $\rightarrow =$	(3500, 4000]	
K $\rightarrow =$	(4000, 4500]	
L $\rightarrow =$	(4500, 5000]	
M $\rightarrow =$	NONE OF THE ABOVE CHOICES IS CORRECT.	

Q.4. (Marks: 5). 279TB10.1.4. A random variable  $X$  has a probability mass function  $p(x) = P(X = x)$  given by :

$X = x$	-2	-1	0	1	2
$p(x)$	0.3	0.2	0.2	0.1	0.2

Find the values of the following:

- $P(X > 0) = \underline{\hspace{2cm}}$
- $P(2X + 1 = 3) = \underline{\hspace{2cm}}$
- $P(2X > 1) = \underline{\hspace{2cm}}$
- $\mu = E[X] = \underline{\hspace{2cm}}$
- $E(X^2) = \underline{\hspace{2cm}}$