

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

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**Contents**

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

**NAME:.....**

**I.D.#:**

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

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		1	3	5

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

Q.1. 233Rolf23. (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.

$$\begin{cases} 2x + 10y \leq 80 \\ 6x + 2y \leq 72 \\ 3x + 2y \geq 6 \\ x \geq 0 \text{ \& } y \geq 0 \end{cases}$$

1.  TRUE  or  FALSE  $(2, 0)$  and  $(40, 0)$  are corner points.
2.  TRUE  or  FALSE  $(12, 0)$  and  $(10, 6)$  are corner points.

3.  TRUE  or  FALSE  $(10, 6)$  and  $(0, 36)$  are corner points.
4.  TRUE  or  FALSE  $(0, 8)$  and  $(0, 36)$  are corner points.
5.  TRUE  or  FALSE  $(0, 3)$  and  $(0, 8)$  are corner points.
6.  TRUE  or  FALSE  $(0, 3)$  and  $(2, 0)$  are corner points.
7.  TRUE  or  FALSE  $(2, 0)$  and  $(10, 36)$  are corner points.
8.  TRUE  or  FALSE  $(10, 36)$  and  $(0, 0)$  are corner points.
9.  TRUE  or  FALSE  $(10, 6)$  and  $(0, 0)$  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.

$$\left[ \begin{array}{cccccc|c} x & y & z & s & t & u & Z & : & ct \\ 4 & 1 & 6 & 1 & 0 & 0 & 0 & : & 40 \\ 2 & 1 & 3 & 0 & 1 & 0 & 0 & : & 20 \\ 6 & 1 & 9 & 0 & 0 & 1 & 0 & : & 30 \\ \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots \\ -2 & -4 & -3 & 0 & 0 & 0 & 1 & : & 0 \end{array} \right]$$

ELEMENTARY ROW OPERATIONS:

$$\left[ \begin{array}{cccccc|c} x & y & z & s & t & u & Z & : & ct \\ A & 0 & D & 1 & G & 0 & 0 & : & K \\ 2 & 1 & 3 & 0 & 1 & 0 & 0 & : & 20 \\ B & 0 & E & 0 & -1 & 1 & 0 & : & L \\ \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots & \dots \\ C & 0 & F & 0 & 4 & 0 & 1 & : & M \end{array} \right]$$

Find the values of the constants:

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

Q.4. (Marks: 5). 126Rolf75TB. Ericks invested some money at 8 % compounded semiannually. At the end of 5 years her investment had grown to \$ 3463.76.

Find the initial investment that belongs to the interval:

You must have to write Solution and Answer:

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

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

Q.5. (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
$p(x)$	0.2	0.1	0.3	0.1	0.3

Find the values of the following:

(a)  $P(X > 0) =$  \_\_\_\_\_

(b)  $P(2X + 1 = 5) =$  \_\_\_\_\_

(c)  $P(2X > 1) =$  \_\_\_\_\_

(d)  $\mu = E[X] =$  \_\_\_\_\_

(e)  $E(X^2) =$  \_\_\_\_\_