

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the slope of the line passing through the given pair of points.

1) (5, 1) and (8, 3)

A) $\frac{4}{13}$

B) $-\frac{2}{3}$

C) $\frac{2}{3}$

D) $\frac{3}{2}$

1) _____

2) (-9, -2) and (-3, -2)

A) 0

B) $\frac{1}{3}$

C) $-\frac{2}{3}$

D) Not defined

2) _____

3) (-18, -9) and (8, -19)

A) $\frac{14}{5}$

B) $-\frac{5}{13}$

C) $\frac{5}{13}$

D) $-\frac{13}{5}$

3) _____

Find the slope of the line.

4) $4x - 5y = 34$

A) $-\frac{4}{5}$

B) $-\frac{5}{4}$

C) $\frac{4}{5}$

D) $-\frac{34}{5}$

4) _____

5) A line parallel to $-4x = -7y - 11$

A) $\frac{4}{7}$

B) $\frac{7}{4}$

C) $-\frac{4}{7}$

D) $\frac{11}{4}$

5) _____

6) A line perpendicular to $-5x + 2y = -20$

A) -5

B) $-\frac{5}{2}$

C) $\frac{2}{5}$

D) $-\frac{2}{5}$

6) _____

Find an equation in slope-intercept form (where possible) for the line.

7) Through (2, -7), parallel to $4x + 7y = -27$

A) $y = -\frac{7}{4}x - \frac{7}{4}$

B) $y = -\frac{2}{7}x - \frac{27}{7}$

C) $y = -\frac{4}{7}x - \frac{41}{7}$

D) $y = \frac{4}{7}x + \frac{41}{7}$

7) _____

8) Through (-4, 3), perpendicular to $2x - 5y = 7$

A) $y = -\frac{5}{2}x - 7$

B) $y = -\frac{2}{5}x - \frac{2}{5}$

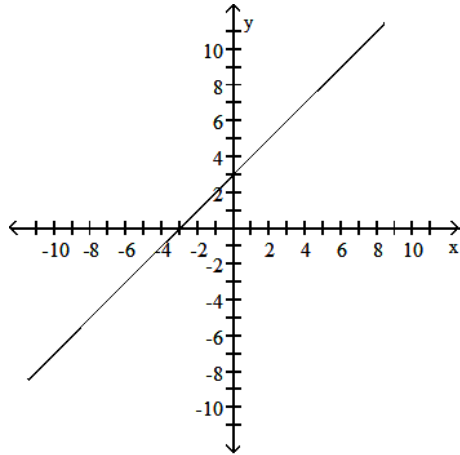
C) $y = \frac{5}{2}x - 7$

D) $y = \frac{4}{5}x + \frac{7}{5}$

8) _____

Find the slope of the line.

9)



A) -1

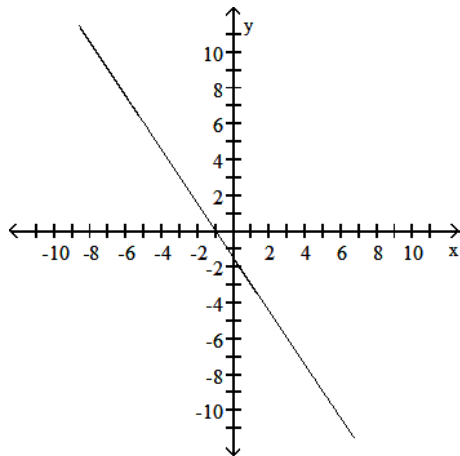
B) -3

C) 1

D) 3

9) _____

10)



A) $-\frac{2}{3}$

B) $\frac{2}{3}$

C) $\frac{3}{2}$

D) $-\frac{3}{2}$

10) _____

Write a cost function for the problem. Assume that the relationship is linear.

11) A cab company charges a base rate of \$2.00 plus 20 cents per minute. Let $C(x)$ be the cost in dollars for using the cab for x minutes.

A) $C(x) = 0.20x + 2.00$

B) $C(x) = 2.00x + 0.20$

C) $C(x) = 2.00x - 0.20$

D) $C(x) = 0.20x - 2.00$

11) _____

12) A cable TV company charges \$29 for the basic service plus \$7 for each movie channel. Let $C(x)$ be the total cost in dollars of subscribing to cable TV, using x movie channels.

A) $C(x) = 7x - 29$

B) $C(x) = 29x - 7$

C) $C(x) = 29x + 7$

D) $C(x) = 7x + 29$

12) _____

13) An electrician charges a fee of \$55 plus \$40 per hour. Let $C(x)$ be the cost in dollars of using the electrician for x hours.

A) $C(x) = 40x + 55$

B) $C(x) = 55x - 40$

C) $C(x) = 55x + 40$

D) $C(x) = 40x - 55$

13) _____

- 14) A moving firm charges a flat fee of \$40 plus \$35 per hour. Let $C(x)$ be the cost in dollars of using the moving firm for x hours. 14) _____
- A) $C(x) = 35x - 40$ B) $C(x) = 35x + 40$ C) $C(x) = 40x + 35$ D) $C(x) = 40x - 35$

Find the correlation coefficient.

- 15) The test scores of 6 randomly picked students and the number of hours they prepared are as follows: 15) _____

Hours	4	10	5	5	3	3
Score	54	99	56	99	70	72

- A) -0.6781 B) -0.2241 C) 0.2015 D) 0.6039

- 16) The following are the temperatures on randomly chosen days and the amount a certain kind of plant grew (in millimeters): 16) _____

Temp	62	76	50	51	71	46	51	44	79
Growth	36	39	50	13	33	33	17	6	16

- A) 0 B) 0.1955 C) -0.2105 D) 0.2563

- 17) The following are costs of advertising (in thousands of dollars) and the number of products sold (in thousands): 17) _____

Cost	9	2	3	4	2	5	9	10
Number	85	52	55	68	67	86	83	73

- A) 0.7077 B) -0.0707 C) 0.2353 D) 0.2456

- 18) The following are the temperatures on randomly chosen days and the amount a certain kind of plant grew (in millimeters): 18) _____

Temp	77	88	85	61	64	72	73	63	74
Growth	39	17	12	22	15	29	14	25	43

- A) 0.0396 B) -0.3105 C) 0 D) -0.0953

Find the simple interest. Assume a 360-day year. Round results to the nearest cent.

- 19) \$16,000 at 3% for 82 days 19) _____
- A) \$16,109.33 B) \$108.00 C) \$109.33 D) \$480.00

- 20) \$16,000 at 4.5% for 108 days 20) _____
- A) \$16,216.00 B) \$720.00 C) \$214.00 D) \$216.00

- 21) \$10,656 at 1.8% for 5 months 21) _____
- A) \$95.90 B) \$63.94 C) \$79.92 D) \$80.59

Find the amount of compound interest earned.

- 22) \$7000 at 5% compounded quarterly for 4 years 22) _____
- A) \$3342.19 B) \$1539.23 C) \$356.62 D) \$8280.12

- 23) \$5000 at 4% compounded semiannually for 4 years 23) _____
- A) \$849.29 B) \$412.16 C) \$1842.85 D) \$858.30

- 24) \$8000 at 5.5% compounded monthly for 5 years 24) _____
- A) \$185.02 B) \$2455.68 C) \$2525.63 D) \$451.26

Solve the problem.

- 25) Tasha borrowed \$14,000 to purchase a new car at an annual interest rate of 8.6%. She is to pay it back in equal monthly payments over a 4 year period. What is her monthly payment? 25) _____
A) \$25.08 B) \$403.80 C) \$345.74 D) \$100.33
- 26) You want to take out a loan to buy a new car for which you need to finance \$21,301. Your bank will give you a loan at 7% compounded monthly. You look at your budget and decide that you can afford a payment of \$257 a month. How many years, to the nearest tenth of a year, must the loan need to be to meet these conditions? 26) _____
A) 9.5 years B) 13.3 years C) 19.9 years D) 5.7 years
- 27) Cara has a loan from her credit union at a rate of 9.2% for which her payments are \$185 per month. The interest is computed on a daily basis on the unpaid balance of the loan. If the loan balance after her last payment was \$2861 and Cara makes her next payment 34 days later, how much of the payment is paid toward interest? 27) _____
A) \$72.11 B) \$7.21 C) \$24.52 D) \$48.22
- 28) Amara borrowed \$8000 to purchase a new car at an annual interest rate of 6.9%. She is to pay it back in equal monthly payments over a 3 year period. How much total interest will be paid over the period of the loan? Round to the nearest dollar. 28) _____
A) \$613 B) \$46 C) \$879 D) \$1751

Solve the system of equations using any method you would like.

- 29) $2x + 4y = 12$
 $2x = -4$ 29) _____
A) (-2, -4) B) (4, -2) C) (-2, 4) D) No solution
- 30) $x + y + z = 6$
 $x - y + 4z = 5$
 $2x + y + z = 4$ 30) _____
A) (3, 5, -2) B) (3, -2, 5) C) (-2, 5, 3) D) No solution
- 31) $9x + 9y - z = 99$
 $x - 6y + 6z = 38$
 $-9x + y + z = -59$ 31) _____
A) (8, 9, 4) B) (8, 4, 9) C) (-8, 4, 16) D) No solution
- 32) $6x - y - 4z = 35$
 $-5x - 2z = -46$
 $2y + z = 5$ 32) _____
A) (-8, 1, 16) B) (8, 3, 1) C) (8, 1, 3) D) No solution
- 33) $x - y + 3z = 14$
 $5x + z = 4$
 $x + 2y + z = 0$ 33) _____
A) (4, -2, 0) B) (0, -2, 4) C) (4, 0, -2) D) No solution

Write the system of equations associated with the augmented matrix. Use the variables X and Y in that order.

34) $\left[\begin{array}{cc|c} 3 & -5 & 4 \\ 0 & 8 & 12 \end{array} \right]$ 34) _____
 A) $x = 4$ B) $-3x+5y=4$ C) $3x-5y=4$ D) $3x-5y=4$
 $y = 12$ $y = 12$ $8y=12$ $8x=12$

35) $\left[\begin{array}{cc|c} 1 & 0 & 10 \\ 0 & 1 & -2 \end{array} \right]$ 35) _____
 A) $x = 10$ B) $x = 0$ C) $x = -10$ D) $x = 1$
 $y = -2$ $y = 0$ $y = 2$ $y = 1$

Provide an appropriate response.

36) Write the augmented matrix for the system. 36) _____
 $6x + 4y = 30$
 $8y = 72$
 $\left[\begin{array}{cc|c} & & \end{array} \right]$
 A) $\left[\begin{array}{cc|c} 6 & 4 & 30 \\ 0 & 8 & 72 \end{array} \right]$ B) $\left[\begin{array}{cc|c} 8 & 0 & 72 \\ 6 & 4 & 4 \end{array} \right]$ C) $\left[\begin{array}{cc|c} 6 & 4 & 30 \\ 8 & 72 & 0 \end{array} \right]$ D) $\left[\begin{array}{cc|c} 30 & 4 & 6 \\ 72 & 0 & 8 \end{array} \right]$

Find the inverse, if it exists, for the matrix.

37) $\begin{bmatrix} 1 & 0 \\ -4 & 5 \end{bmatrix}$ 37) _____
 A) $\begin{bmatrix} \frac{1}{5} & 0 \\ \frac{4}{5} & 1 \end{bmatrix}$ B) $\begin{bmatrix} 1 & 0 \\ -\frac{4}{5} & \frac{1}{5} \end{bmatrix}$ C) $\begin{bmatrix} 1 & 0 \\ \frac{4}{5} & \frac{1}{5} \end{bmatrix}$ D) No inverse

38) $\begin{bmatrix} 1 & 2 \\ 0 & 2 \end{bmatrix}$ 38) _____
 A) $\begin{bmatrix} 1 & 1 \\ 0 & \frac{1}{2} \end{bmatrix}$ B) $\begin{bmatrix} 0 & \frac{1}{2} \\ 1 & -1 \end{bmatrix}$ C) $\begin{bmatrix} 1 & -1 \\ 0 & \frac{1}{2} \end{bmatrix}$ D) $\begin{bmatrix} \frac{1}{2} & -1 \\ 0 & 1 \end{bmatrix}$

39) $\begin{bmatrix} 2 & -3 \\ -1 & 0 \end{bmatrix}$ 39) _____
 A) $\begin{bmatrix} -\frac{1}{3} & -\frac{2}{3} \\ 0 & -1 \end{bmatrix}$ B) $\begin{bmatrix} 0 & -1 \\ -\frac{1}{3} & -\frac{2}{3} \end{bmatrix}$ C) $\begin{bmatrix} 0 & 1 \\ \frac{1}{3} & -\frac{2}{3} \end{bmatrix}$ D) $\begin{bmatrix} -\frac{2}{3} & -1 \\ -\frac{1}{3} & 0 \end{bmatrix}$

Solve the problem.

40) A company makes three chocolate candies: cherry, almond, and raisin. Matrix A gives the amount of ingredients in one batch. Matrix B gives the costs of ingredients from suppliers J and K. Multiply the matrices.

40) _____

$$A = \begin{bmatrix} \text{sugar} & \text{choc} & \text{milk} \\ 6 & 8 & 1 \\ 6 & 4 & 1 \\ 5 & 7 & 1 \end{bmatrix} \begin{array}{l} \text{cherry} \\ \text{almond} \\ \text{raisin} \end{array}$$

$$B = \begin{bmatrix} \text{J} & \text{K} \\ 4 & 3 \\ 4 & 5 \\ 2 & 2 \end{bmatrix} \begin{array}{l} \text{sugar} \\ \text{choc} \\ \text{milk} \end{array}$$

A)

$$\begin{bmatrix} \text{J} & \text{K} \\ 60 & 45 \\ 44 & 55 \\ 26 & 26 \end{bmatrix} \begin{array}{l} \text{cherry} \\ \text{almond} \\ \text{raisin} \end{array}$$

C)

$$\begin{bmatrix} \text{J} & \text{K} \\ 45 & 60 \\ 55 & 44 \\ 26 & 26 \end{bmatrix} \begin{array}{l} \text{cherry} \\ \text{almond} \\ \text{raisin} \end{array}$$

B)

$$\begin{bmatrix} \text{J} & \text{K} \\ 58 & 60 \\ 42 & 40 \\ 50 & 52 \end{bmatrix} \begin{array}{l} \text{sugar} \\ \text{choc} \\ \text{milk} \end{array}$$

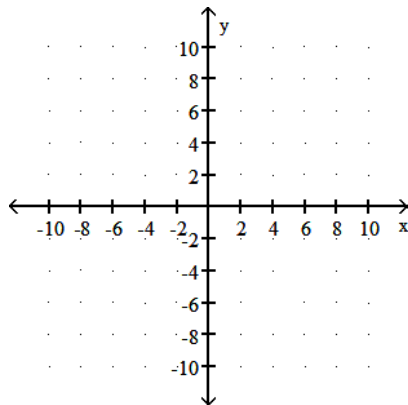
D)

$$\begin{bmatrix} \text{J} & \text{K} \\ 58 & 60 \\ 42 & 40 \\ 50 & 52 \end{bmatrix} \begin{array}{l} \text{cherry} \\ \text{almond} \\ \text{raisin} \end{array}$$

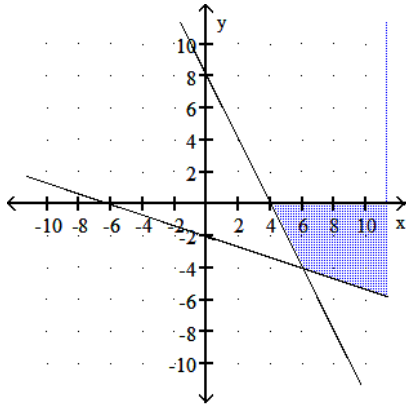
Graph the feasible region for the system of inequalities. When you are choosing your answer the feasible region is represented by the shaded area.

41) $3y + x \geq -6$
 $y + 2x \leq 8$
 $y \leq 0$
 $x \geq 0$

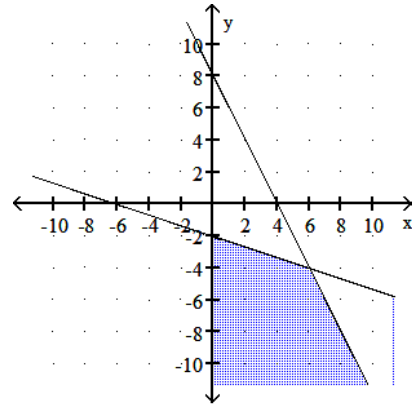
41) _____



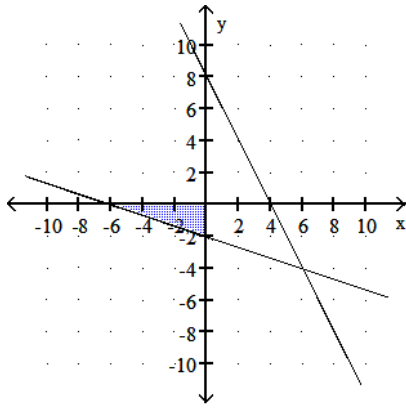
A)



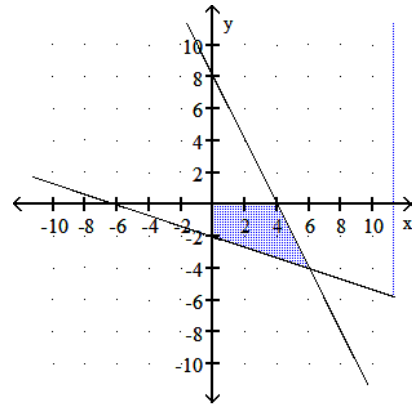
B)



C)



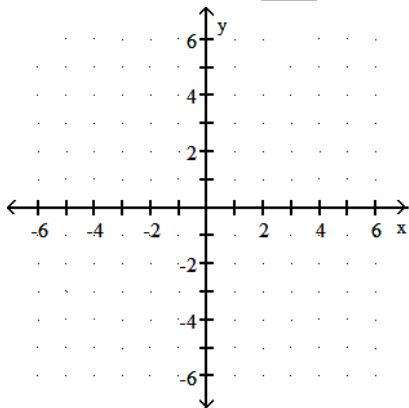
D)



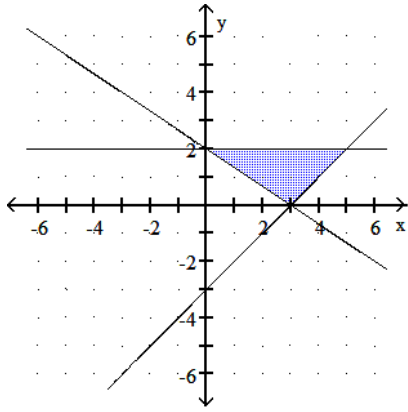
42) $2x + 3y \geq 6$
 $x - y \geq 3$
 $y \leq 2$

Graph the feasible region for the system of inequalities. When you are choosing your answer the feasible region is represented by the shaded area.

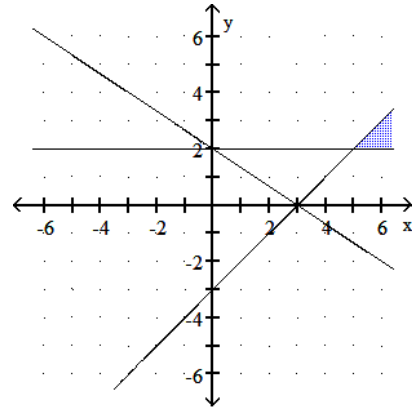
42) _____



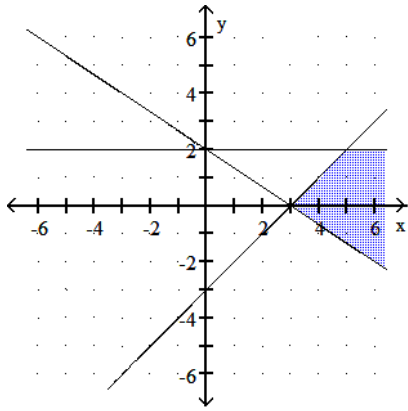
A)



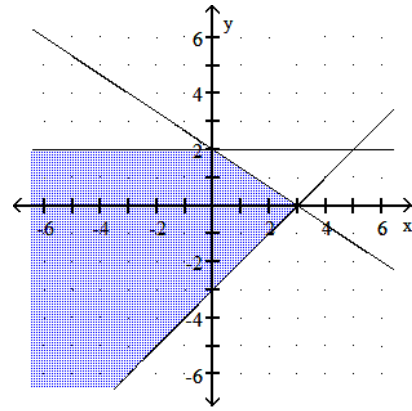
B)



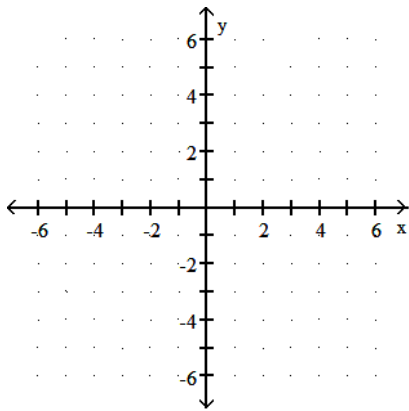
C)



D)

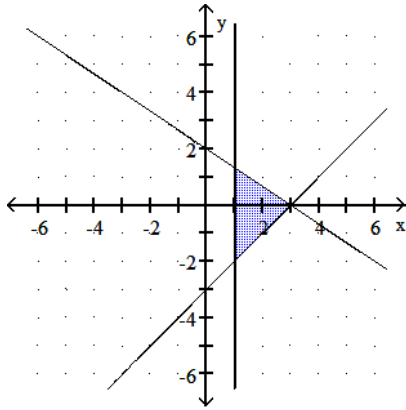


43) $2x + 3y \geq 6$
 $x - y \leq 3$
 $x \geq 1$

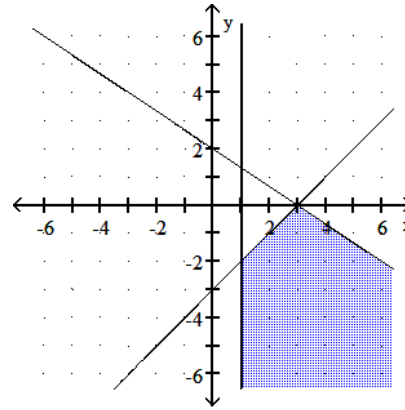


43) _____

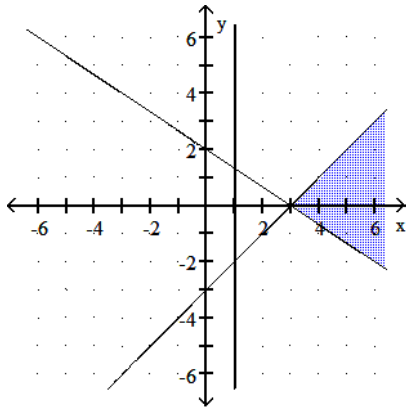
A)



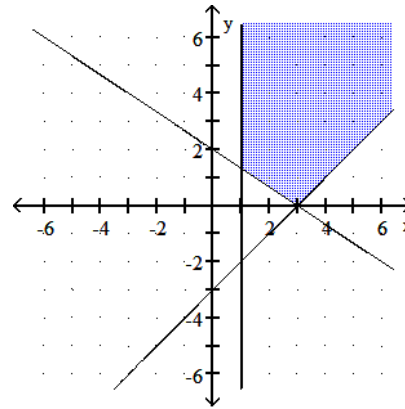
B)



C)



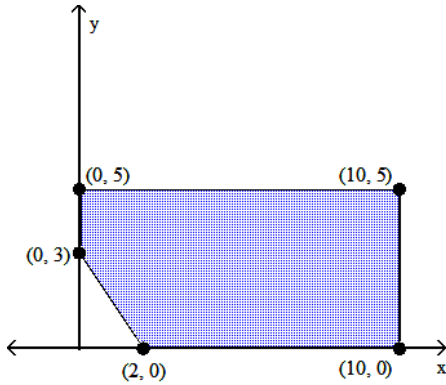
D)



Use the indicated region of feasible solutions to find the maximum and minimum values of the given objective function. When looking at the graph the feasible region is represented by the shaded area.

44) $z = 18x + 10y$

44) _____

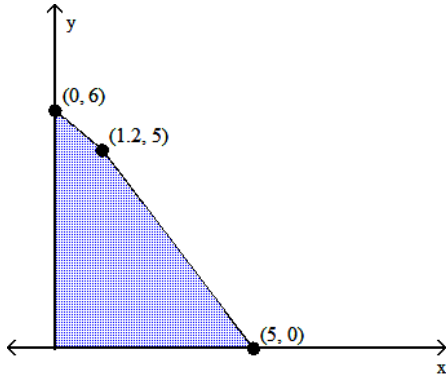


- A) Maximum of 230; minimum of 180
- C) Maximum of 50; minimum of 30

- B) Maximum of 180; minimum of 30
- D) Maximum of 230; minimum of 30

45) $z = 11x - 18y$

45) _____

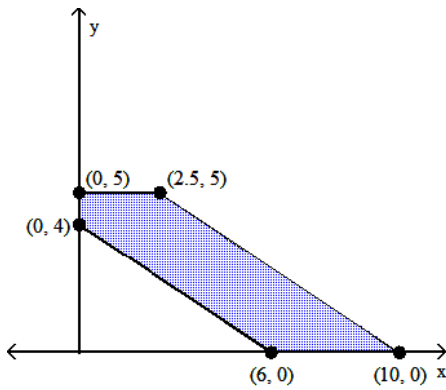


- A) Maximum of -76.25; minimum of -108
- C) Maximum of -108; minimum of 0

- B) Maximum of 55; minimum of 0
- D) Maximum of 55; minimum of -108

46) $z = 8x + 8y$

46) _____



- A) Maximum of 56 minimum of 32
- C) Maximum of -32 minimum of -56

- B) Maximum of 48 minimum of 40
- D) Maximum of 80; minimum of 32

Let $A = \{1, 3, 5, 7\}$; $B = \{5, 6, 7, 8\}$; $C = \{5, 8\}$; $D = \{2, 5, 8\}$; and $U = \{1, 2, 3, 4, 5, 6, 7, 8\}$. Determine whether the given statement is true or false.

47) $C \subseteq D$

47) _____

- A) True

- B) False

48) $A \subset \{7, 5, 3, 1\}$

48) _____

- A) True

- B) False

49) $B \subset D$

49) _____

- A) True

- B) False

Use any method to solve the system of equations.

50) $x + y + z = 9$

$2x - 3y + 4z = 7$

$x - 4y + 3z = -2$

A) $\left\{ \frac{-7}{5}z + \frac{34}{5}, \frac{2}{5}z - \frac{11}{5}, z \right\}$

C) $\left\{ \frac{7}{5}z + \frac{34}{5}, \frac{2}{5}z + \frac{11}{5}, z \right\}$

B) $\left\{ \frac{-7}{5}z + \frac{34}{5}, \frac{2}{5}z + \frac{11}{5}, z \right\}$

D) $\left\{ \frac{7}{5}z + \frac{34}{5}, \frac{2}{5}z - \frac{11}{5}, z \right\}$

50) _____

51) $3x + y + z = 5$

$4x + 5y - z = -8$

$10x + 7y + z = 2$

A) $\left\{ \frac{6}{11}z + \frac{33}{11}, \frac{7}{11}z + \frac{44}{11}, z \right\}$

C) $\left\{ \frac{6}{11}z + \frac{33}{11}, \frac{7}{11}z - \frac{44}{11}, z \right\}$

B) $\left\{ \frac{-6}{11}z + \frac{33}{11}, \frac{7}{11}z - \frac{44}{11}, z \right\}$

D) $\left\{ \frac{-6}{11}z + \frac{33}{11}, \frac{-7}{11}z - \frac{44}{11}, z \right\}$

51) _____

Use the Gauss-Jordan method to solve the system of equations.

52) $3x + 2y + z = 4$

$2x - 3y - z = 5$

$5x + 12y + 5z = 2$

A) $\left\{ \frac{-1}{13}z + \frac{22}{13}, \frac{-5}{13}z + \frac{7}{13}, z \right\}$

C) $\left\{ \frac{1}{13}z - \frac{22}{13}, \frac{5}{13}z - \frac{7}{13}, z \right\}$

B) $\left\{ \frac{1}{13}z + \frac{22}{13}, \frac{-5}{13}z - \frac{7}{13}, z \right\}$

D) $\left\{ \frac{-1}{13}z + \frac{22}{13}, \frac{-5}{13}z - \frac{7}{13}, z \right\}$

52) _____

Find the value.

53) Let $A = \begin{bmatrix} -3 & 3 \\ 0 & 2 \end{bmatrix}$; Find $2A$

A) $\begin{bmatrix} -6 & 3 \\ 0 & 2 \end{bmatrix}$

B) $\begin{bmatrix} -6 & 6 \\ 0 & 4 \end{bmatrix}$

C) $\begin{bmatrix} -1 & 5 \\ 2 & 4 \end{bmatrix}$

D) $\begin{bmatrix} -6 & 6 \\ 0 & 2 \end{bmatrix}$

53) _____

54) Let $A = \begin{bmatrix} -5 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 \end{bmatrix}$; $3A + 4B$

A) $\begin{bmatrix} -9 & 4 \end{bmatrix}$

B) $\begin{bmatrix} -2 & 2 \end{bmatrix}$

C) $\begin{bmatrix} -11 & 6 \end{bmatrix}$

D) $\begin{bmatrix} -15 & 4 \end{bmatrix}$

54) _____

55) Let $B = \begin{bmatrix} -1 & 1 & 5 & -3 \end{bmatrix}$; $-3B$

A) $\begin{bmatrix} 3 & 1 & 5 & -3 \end{bmatrix}$

B) $\begin{bmatrix} -3 & -1 & 3 & -5 \end{bmatrix}$

C) $\begin{bmatrix} 3 & -3 & -15 & 9 \end{bmatrix}$

D) $\begin{bmatrix} -3 & 3 & 15 & -9 \end{bmatrix}$

55) _____

56) Let $A = \begin{bmatrix} 2 & 3 \\ 2 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 4 \\ -1 & 6 \end{bmatrix}$; $3A + B$

A) $\begin{bmatrix} 6 & 21 \\ 3 & 36 \end{bmatrix}$

B) $\begin{bmatrix} 6 & 13 \\ 5 & 24 \end{bmatrix}$

C) $\begin{bmatrix} 6 & 7 \\ 5 & 12 \end{bmatrix}$

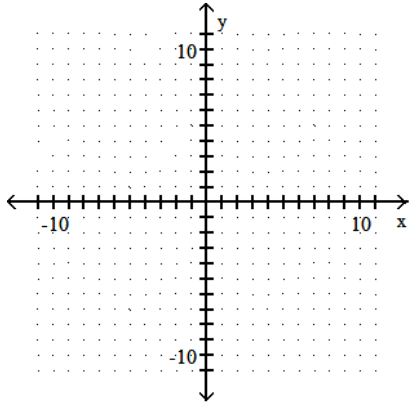
D) $\begin{bmatrix} 6 & 13 \\ 1 & 12 \end{bmatrix}$

56) _____

Use graphical methods to solve the linear programming problem.

57) Maximize $z = 8x + 12y$
 subject to: $40x + 80y \leq 560$
 $6x + 8y \leq 72$
 $x \geq 0$
 $y \geq 0$

57) _____

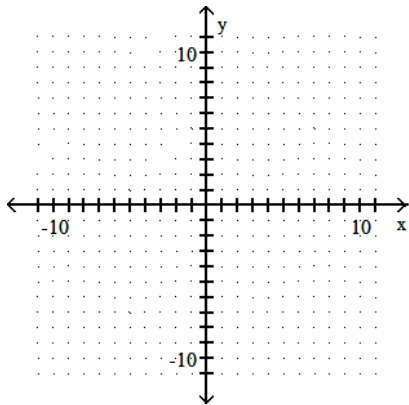


- A) Maximum of 100 when $x = 8$ and $y = 3$
 C) Maximum of 96 when $x = 9$ and $y = 2$

- B) Maximum of 120 when $x = 3$ and $y = 8$
 D) Maximum of 92 when $x = 4$ and $y = 5$

58) Minimize $z = 0.18x + 0.12y$
 subject to: $2x + 6y \geq 30$
 $4x + 2y \geq 20$
 $x \geq 0$
 $y \geq 0$

58) _____

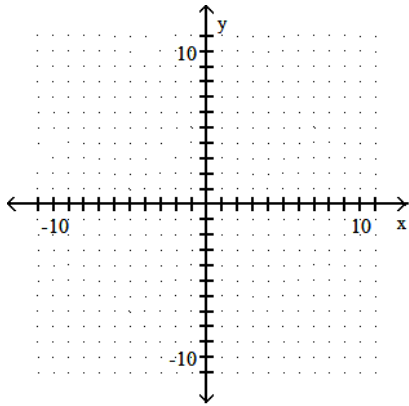


- A) Minimum of 1.08 when $x = 4$ and $y = 3$
 C) Minimum of 1.86 when $x = 9$ and $y = 2$

- B) Minimum of 1.2 when $x = 4$ and $y = 4$
 D) Minimum of 1.02 when $x = 3$ and $y = 4$

59) Maximize $z = 2x + 5y$
 subject to:
 $3x + 2y \leq 6$
 $-2x + 4y \leq 8$
 $x \geq 0$
 $y \geq 0$

59) _____



- A) Maximum of 10 when $x = 0$ and $y = 2$ B) Maximum of $\frac{34}{3}$ when $x = \frac{2}{3}$ and $y = 2$
 C) Maximum of $\frac{49}{4}$ when $x = \frac{1}{2}$ and $y = \frac{9}{4}$ D) Maximum of 19 when $x = 2$ and $y = 3$

Use a Venn diagram to answer the question.

60) At East Zone University (EZU) there are 784 students taking College Algebra or Calculus. 315 are taking College Algebra, 509 are taking Calculus, and 40 are taking both College Algebra and Calculus. How many are taking Algebra but not Calculus?

60) _____

- A) 275 B) 744 C) 235 D) 469

61) At East Zone University (EZU) there are 896 students taking College Algebra or Calculus. 520 are taking College Algebra, 407 are taking Calculus, and 31 are taking both College Algebra and Calculus. How many are taking Calculus but not Algebra?

61) _____

- A) 865 B) 376 C) 458 D) 489

62) A survey of 240 families showed that
 91 had a dog;
 70 had a cat;
 31 had a dog and a cat;
 91 had neither a cat nor a dog, and in addition did not have a parakeet;
 7 had a cat, a dog, and a parakeet.
 How many had a parakeet only?

62) _____

- A) 19 B) 34 C) 24 D) 29

Use the given table to find the indicated probability.

- 63) College students were given three choices of pizza toppings and asked to choose one favorite. The following table shows the results. 63) _____

Toppings	Freshman	Sophomore	Junior	Senior	Totals
Cheese	12	12	28	29	81
Meat	23	29	12	12	76
Veggie	12	12	23	29	76

A student is selected at random. Find the probability that the student's favorite topping is meat given that the student is a junior.

- A) 0.307 B) 0.158 C) 0.052 D) 0.190
- 64) College students were given three choices of pizza toppings and asked to choose one favorite. The following table shows the results. 64) _____

Toppings	Freshman	Sophomore	Junior	Senior	Totals
Cheese	10	10	29	20	69
Meat	19	20	10	10	59
Veggie	10	10	19	20	59

A student is selected at random. Find the probability that the student's favorite topping is veggie given that the student is a junior or senior.

- A) 0.661 B) 0.328 C) 0.361 D) 0.209
- 65) People in a survey were given three choices of soft drinks and asked to choose one favorite. The following table shows the results. 65) _____

	cola	root beer	lemon-lime	totals
under 21 years of age	40	25	20	85
between 21 and 40	35	20	30	85
over 40 years of age	20	30	35	85

One of the participants is selected at random. Find the probability that the person is over 40 and prefers cola.

- A) $\frac{4}{51}$ B) $\frac{4}{17}$
- C) $\frac{4}{19}$ D) none of the above

- 66) People in a survey were given three choices of soft drinks and asked to choose one favorite. The following table shows the results. 66) _____

	cola	root beer	lemon-lime	totals
under 21 years of age	40	25	20	85
between 21 and 40	35	20	30	85
over 40 years of age	20	30	35	85

One of the participants is selected at random. Find the probability that the person is over 40 given that they prefer root beer.

- A) $\frac{2}{17}$ B) $\frac{5}{17}$ C) $\frac{2}{5}$ D) $\frac{6}{17}$

- 67) The following table contains data from a study of two airlines which fly to Smalltown, USA. 67) _____

	Number of flights arrived on time	Number of flights arrived late	Totals
Podunk Airlines	33	6	39
Upstate Airlines	43	5	48

If a flight is selected at random, what is the probability that it was on time given that it was on Upstate Airlines?

- A) $\frac{43}{76}$ B) $\frac{43}{48}$ C) $\frac{11}{76}$ D) $\frac{43}{87}$

Solve the problem.

- 68) Let the supply and demand functions for a certain model of electric pencil sharpener be given by 68) _____

$$q = S(p) = \frac{3}{2}p \quad \text{and} \quad q = D(p) = 24 - \frac{3}{2}p$$

Where p is the price in dollars and q is the quantity of pencil sharpeners (in hundreds), find the equilibrium quantity and the equilibrium price.

- A) Equilibrium quantity: 640
Equilibrium price: \$9.60
- B) Equilibrium quantity: 960
Equilibrium price: \$6.40
- C) Equilibrium quantity: 950
Equilibrium price: \$7
- D) Equilibrium quantity: 1200
Equilibrium price: \$8

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

69) (This question type will be multiple choice on the final exam)

69) _____

Duffin House is planning its annual Song Festival when it will serve three kinds of delicacies: granola treats, nutty granola treats, and nuttiest granola treats. The following table shows the ingredients required (in ounces) for a single serving of each delicacy, as well as the total amount of each ingredient available:

	Granola	Nutty Granola	Nuttiest Granola	Total Available
Toasted Oats	8	6	4	3,600
Raisins	4	4	2	2,000
Almonds	0	2	4	2,400

The Song Festival planners at Duffin House would like to use up ALL the ingredients. How many servings of each kind of delicacy can they make?

70) (This question type will be multiple choice on the final exam)

70) _____

Jeremiah Calhoun's 36-gallon tropical fish tank contains three types of carnivorous creatures (baby sharks, piranhas, and squids) and he feeds them three types of food: goldfish, angelfish, and butterfly fish. Each baby shark can eat 1 goldfish, 2 angelfish, and 2 butterfly fish; each piranha can eat 1 goldfish and 3 butterfly fish per day; while each squid can eat 1 goldfish and 1 angelfish per day. Billy-Sean will feed 21 goldfish, 21 angelfish, and 35 butterflyfish to satisfy all the creatures. How many baby sharks, piranhas, and squids are in the tank?

Answer Key

Testname:

- 1) C
- 2) A
- 3) B
- 4) C
- 5) A
- 6) D
- 7) C
- 8) A
- 9) C
- 10) D
- 11) A
- 12) D
- 13) A
- 14) B
- 15) D
- 16) B
- 17) A
- 18) D
- 19) C
- 20) D
- 21) C
- 22) B
- 23) D
- 24) C
- 25) C
- 26) A
- 27) C
- 28) C
- 29) C
- 30) C
- 31) B
- 32) C
- 33) B
- 34) C
- 35) A
- 36) A
- 37) C
- 38) C
- 39) B
- 40) D
- 41) D
- 42) C
- 43) D
- 44) D
- 45) D
- 46) D
- 47) A
- 48) A
- 49) A
- 50) B

Answer Key

Testname:

- 51) B
- 52) D
- 53) B
- 54) C
- 55) C
- 56) B
- 57) A
- 58) D
- 59) C
- 60) A
- 61) B
- 62) A
- 63) D
- 64) C
- 65) A
- 66) C
- 67) B
- 68) D
- 69) 50 servings of granola treats, 200 servings of nutty granola treats, and 500 servings of nuttiest granola treats
- 70) 7 baby sharks, 7 piranhas, and 7 squids