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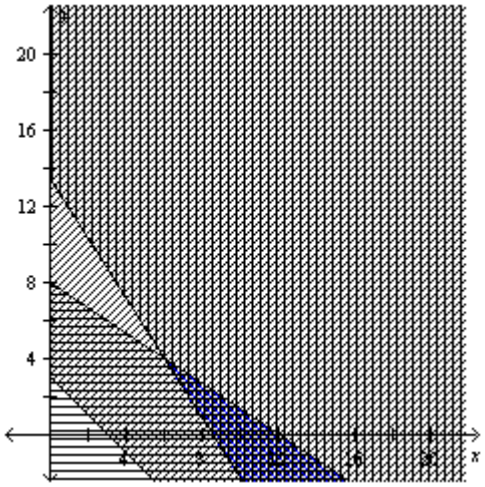
Indicate the answer choice that best completes the statement or answers the question.

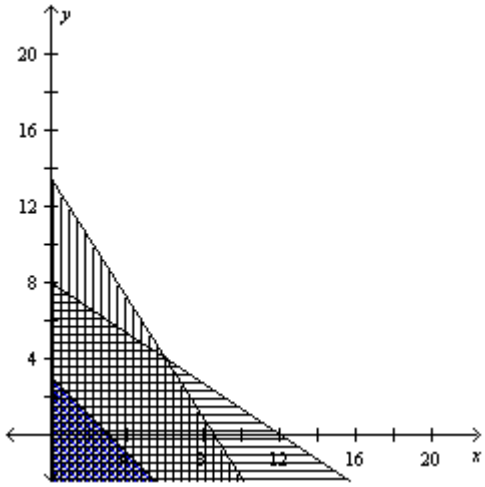
1. Graph the region corresponding to the solution of the system of constraints.

$f(x, y) = 3y + x$
$x \geq 0$
$y \geq -2$
$8x + 12y \leq 96$
$11x + 7y \leq 94$
$x + y \geq 3$

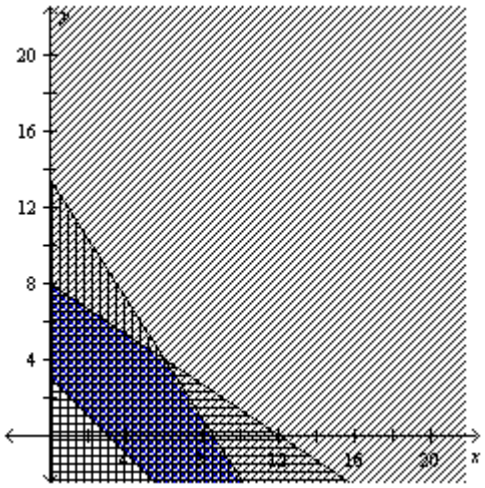
a.



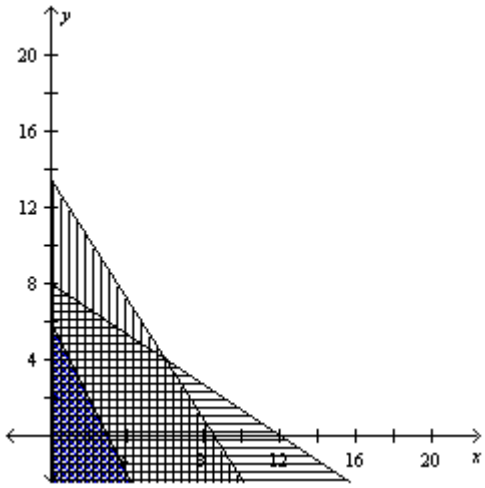
b.



c.



d.



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Find the maximum and minimum values of the objective function $f(x, y)$ and for what values of x and y they occur, subject to the given constraints.

2. $f(x, y) = 2x + 6y$
$x \geq 0$
$y \geq 0$
$2x + 7y \leq 70$
$8x + 4y \leq 136$

a. max at $(14, 6) = 64$, min at $(0, 0) = 0$
b. max at $(15, 9) = 84$, min at $(0, 0) = 0$
c. max at $(0, 10) = 60$, min at $(0, 0) = 0$
d. max at $(17, 0) = 34$, min at $(0, 0) = 0$

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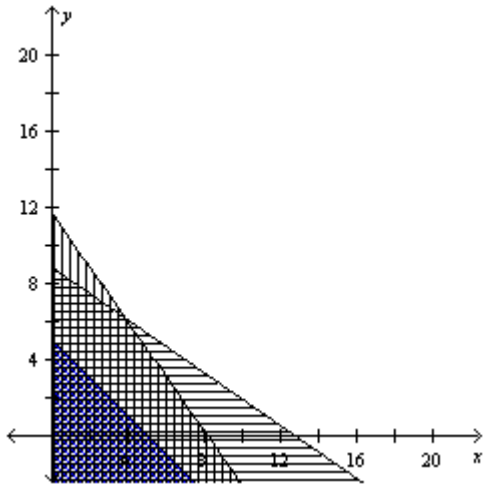
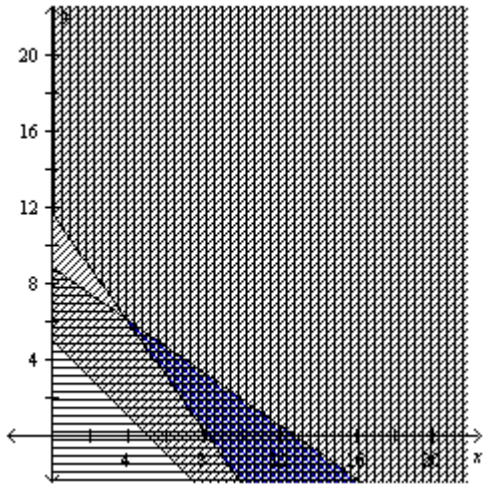
3. Graph the region corresponding to the solution of the system of constraints.

$f(x, y) = 3y + x$
$x \geq 0$
$y \geq -2$
$9x + 13y \leq 114$
$10x + 7y \leq 82$
$2x + 2y \geq 10$

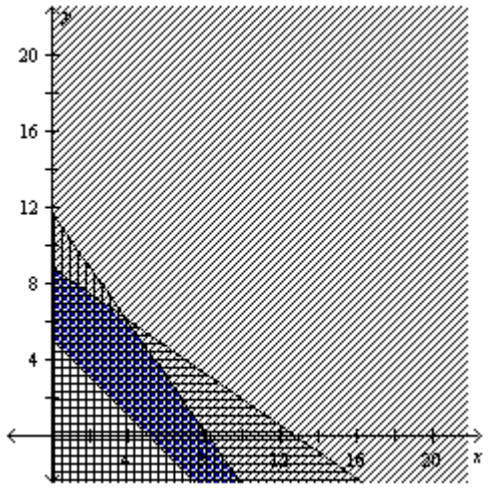
a.



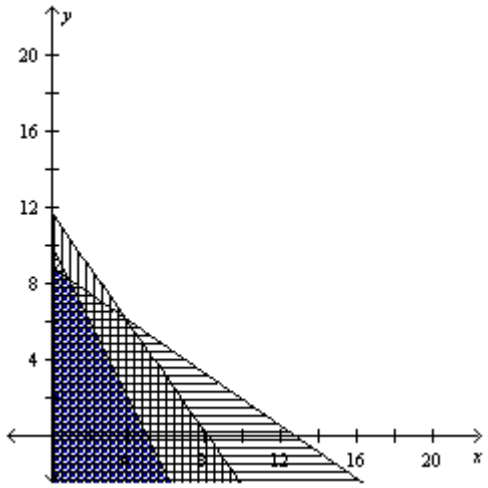
b.



c.



d.



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Find the maximum and minimum values of the objective function $f(x, y)$ and for what values of x and y they occur, subject to the given constraints.

4. $f(x, y) = 2x + 6y$
$y \leq -2x - 5$
$y \leq 6x - 13$
$y \geq -2x + 43$

a. min at $(1, -7) = -40$, max at $(7, 29) = 188$

b. max at $(7, 29) = 188$, no min

c. max at $(1, -7) = -40$, no min

d. min at $(1, -7) = -40$, no max

5. Write the augmented matrix for the system of linear equations.

$-5w + 4x + 7y + z = 7$
$7x - 6y - 7z = -5$
$-7w - 5x + 9y - 3z = 9$

$-3w + 2x - 7y = -2$

a. $\left[\begin{array}{cccc|c} -5 & 4 & 7 & 1 & 7 \\ 7 & 7 & -6 & -7 & -5 \\ -3 & 2 & -7 & -7 & -2 \\ -7 & -5 & 9 & -3 & 9 \end{array}\right]$

b. $\left[\begin{array}{cccc|c} -7 & -5 & 9 & -3 & 9 \\ 0 & 7 & -6 & -7 & -5 \\ -5 & 4 & 7 & 1 & 7 \\ 0 & -3 & 2 & -7 & -2 \end{array}\right]$

c. $\left[\begin{array}{cccc|c} -5 & 4 & 7 & 1 & 7 \\ 0 & 7 & -6 & -7 & -5 \\ -7 & -5 & 9 & -3 & 9 \\ -3 & 2 & -7 & 0 & -2 \end{array}\right]$

d. $\left[\begin{array}{cccc|c} -7 & -5 & 9 & -3 & 9 \\ 7 & -6 & -7 & -5 & 0 \\ -5 & 4 & 7 & 1 & 7 \\ -3 & 2 & -7 & -2 & 0 \end{array}\right]$

6. Use Cramer's Rule to find the solution of the system of linear equations, if a unique solution exists.

$-2x - 8y = 76$
$-7x - y = 77$

a. $(-10, -7)$ b. $(-13, -6)$
c. $(-10, -6)$ d. no unique solution

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7. Use an inverse matrix to solve the system of equations, if possible.

$2x - 2y + 4z = 4$
$-5x + 4y + 3z = -2$
$-x - 7y + 6z = -34$

a. $(10, -5, 1)$ b. $(10, -8, -8)$
c. $(5, 5, 1)$ d. no solution

8. Write the augmented matrix for the system of linear equations.

$-9w + x + 8y + 2z = -6$
$-5x + 9y - 7z = 6$
$-3w - 6x + 4y + 9z = 4$

$-3w - 8x + y = -2$

a. $\left[\begin{array}{cccc|c} -9 & 1 & 8 & 2 & -6 \\ 0 & -5 & 9 & -7 & 6 \\ -3 & -6 & 4 & 9 & 4 \\ -3 & -8 & 1 & 0 & -2 \end{array}\right]$

b. $\left[\begin{array}{cccc|c} -3 & -6 & 4 & 9 & 4 \\ 0 & -5 & 9 & -7 & 6 \\ -9 & 1 & 8 & 2 & -6 \\ 0 & -3 & -8 & 1 & -2 \end{array}\right]$

c. $\left[\begin{array}{cccc|c} -9 & 1 & 8 & 2 & -6 \\ -5 & -5 & 9 & -7 & 6 \\ -3 & -8 & 1 & 1 & -2 \\ -3 & -6 & 4 & 9 & 4 \end{array}\right]$

d. $\left[\begin{array}{cccc|c} -3 & -6 & 4 & 9 & 4 \\ -5 & 9 & -7 & 6 & 0 \\ -9 & 1 & 8 & 2 & -6 \\ -3 & -8 & 1 & -2 & 0 \end{array}\right]$

9. Write the system of equations in triangular form using Gaussian elimination. Then solve the system.

$3x + 9y - 18z = -207$
$-3x + y + 5z = 50$
$2x - 6y - 6z = -36$

a. $x = -6, y = -6, z = 7$ b. $x = -3, y = -4, z = 9$
c. $x = -4, y = -3, z = 11$ d. $x = -24, y = -5, z = 5$

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10. Use an inverse matrix to solve the system of equations, if possible.

$x + 5y - 3z = -10$
$-5x + 6y - 5z = -21$
$-x + 8y - 8z = -25$

a. $(1, -1, 2)$ b. $(-6, -5, 2)$
c. $(-6, -2, -2)$ d. no solution

11. Write the augmented matrix for the system of linear equations.

$7w - 8x + 5y - 9z = 8$
$-5x - y + 7z = -1$
$3w - x - 7y + 4z = 3$

$3w - 6x - 9y = -6$

a. $\left[\begin{array}{cccc|c} 3 & -1 & -7 & 4 & 3 \\ 0 & -5 & -1 & 7 & -1 \\ 7 & -8 & 5 & -9 & 8 \\ 0 & 3 & -6 & -9 & -6 \end{array}\right]$

b. $\left[\begin{array}{cccc|c} 7 & -8 & 5 & -9 & 8 \\ 0 & -5 & -1 & 7 & -1 \\ 3 & -1 & -7 & 4 & 3 \\ 3 & -6 & -9 & 0 & -6 \end{array}\right]$

c. $\left[\begin{array}{cccc|c} 3 & -1 & -7 & 4 & 3 \\ -5 & -1 & 7 & -1 & 0 \\ 7 & -8 & 5 & -9 & 8 \\ 3 & -6 & -9 & -6 & 0 \end{array}\right]$

d. $\left[\begin{array}{cccc|c} 7 & -8 & 5 & -9 & 8 \\ -5 & -5 & -1 & 7 & -1 \\ 3 & -6 & -9 & -9 & -6 \\ 3 & -1 & -7 & 4 & 3 \end{array}\right]$

Find the maximum and minimum values of the objective function $f(x, y)$ and for what values of x and y they occur, subject to the given constraints.

12. $f(x, y) = 2x + 6y$
$y \leq -5x - 4$
$y \leq 4x - 4$
$y \geq -5x + 59$

a. max at $(7, 24) = 158$, no min b. min at $(0, -4) = -24$, no max
c. min at $(0, -4) = -24$, max at $(7, 24) = 158$ d. max at $(0, -4) = -24$, no min

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13. Choose the phrase that best describes the matrix.

$$\left[\begin{array}{ccc|c} 1 & 2 & -5 & -9 \\ 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 6 \end{array}\right]$$

a. augmented matrix in row-echelon form
b. augmented matrix
c. coefficient matrix
d. none of the above

14. Use an inverse matrix to solve the system of equations, if possible.

$3x - 2y + z = -15$
$6x - 4y + 5z = -54$
$4x + 8y - z = -44$

a. $(-5, -4, -8)$
b. $(-7, 6, -8)$
c. $(-7, -5, -4)$
d. no solution

15. Choose the phrase that best describes the matrix.

$$\begin{bmatrix} -1 & -3 & -1 \\ 9 & -9 & -1 \\ -1 & -3 & 4 \end{bmatrix}$$

a. coefficient matrix
b. augmented matrix in row-echelon form
c. augmented matrix
d. none of the above

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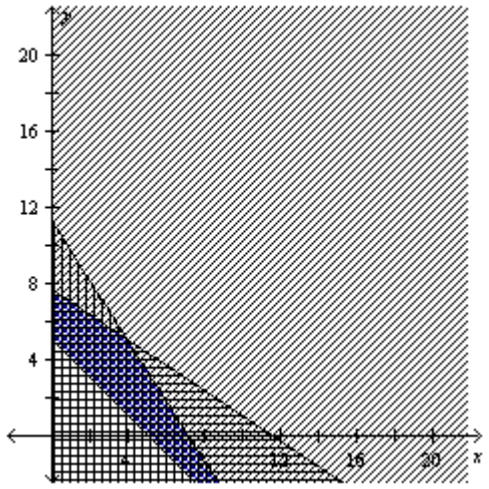
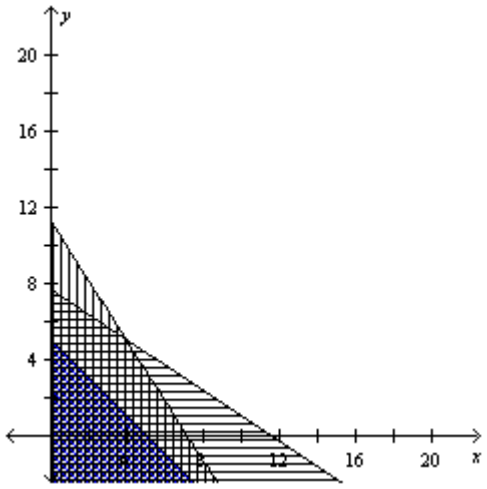
16. Graph the region corresponding to the solution of the system of constraints.

$f(x, y) = 3y + x$
$x \geq 0$
$y \geq -2$
$8x + 12y \leq 92$
$11x + 7y \leq 79$
$x + y \geq 5$

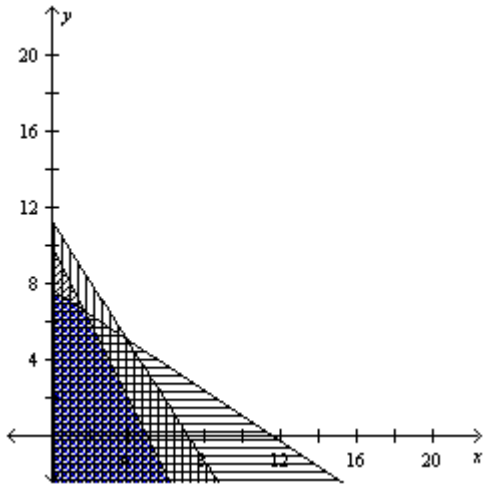
a.



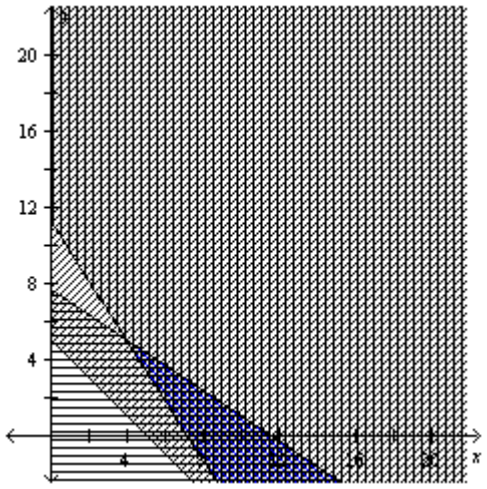
b.



c.



d.



17. Choose the phrase that best describes the matrix.

$$\left[\begin{array}{ccc|c} 1 & 3 & -9 & 3 \\ 0 & 1 & 1 & -8 \\ 0 & 0 & 1 & 6 \end{array}\right]$$

a. augmented matrix in row-echelon form
b. augmented matrix
c. coefficient matrix
d. none of the above

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Find the maximum and minimum values of the objective function *f*(*x*, *y*) and for what values of *x* and *y* they occur, subject to the given constraints.

18. $f(x, y) = 4x + 6y$
$y \leq -4x - 4$
$y \leq 2x - 10$
$y \geq -4x + 20$

a. min at $(1, -8) = -44$, max at $(5, 0) = 20$
b. min at $(1, -8) = -44$, no max
c. max at $(1, -8) = -44$, no min
d. max at $(5, 0) = 20$, no min

19. Use an inverse matrix to solve the system of equations, if possible.

$x - 5y + 2z = -33$
$-x - 4y + z = -42$
$x - 9y - 6z = -113$

a. $(8, -1, 5)$
b. $(7, 10, 5)$
c. $(8, 9, 2)$
d. no solution

Find the maximum and minimum values of the objective function *f*(*x*, *y*) and for what values of *x* and *y* they occur, subject to the given constraints.

20. $f(x, y) = 3x + 7y$
$x \geq 0$
$y \geq 0$
$4x + 8y \leq 48$
$6x + 3y \leq 36$

a. max at $(4, 4) = 40$, min at $(0, 0) = 0$
b. max at $(0, 6) = 42$, min at $(0, 0) = 0$
c. max at $(6, 0) = 18$, min at $(0, 0) = 0$
d. max at (5, 7) = 64, min at (0, 0) = 0

21. Use Cramer's Rule to find the solution of the system of linear equations, if a unique solution exists.

$-4x - y + z = -31$
$-3x - y + 3z = -29$
$-x + 2y - 2z = 8$

a. (4, –6, 6)
b. (6, 5, –2)
c. (4, –3, –2)
d. no unique solution

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22. Use an inverse matrix to solve the system of equations, if possible.

$-6x + 5y + 4z = 0$
$5x + 7y + 4z = -74$
$4x + 2y - 4z = -16$

a. $(-6, -4, -4)$ b. $(-6, -4, -4)$
c. $(-6, 5, -4)$ d. no solution

23. Choose the phrase that best describes the matrix.

$$\left[\begin{array}{ccc|c} 1 & -4 & 3 & 5 \\ 1 & 1 & 9 & -8 \\ 0 & 0 & 1 & 9 \end{array}\right]$$

a. augmented matrix in row-echelon form b. augmented matrix
c. coefficient matrix d. none of the above

24. Write the augmented matrix for the system of linear equations.

$8w - x - 8y - 7z = 0$
$-5x + 9y - 6z = 5$
$2w + 7x + 5y - 2z = 6$

$w - 7x + y = 9$

a. $\left[\begin{array}{cccc|c} 8 & -1 & -8 & -7 & 0 \\ -5 & -5 & 9 & -6 & 5 \\ 1 & -7 & 1 & 1 & 9 \\ 2 & 7 & 5 & -2 & 6 \end{array}\right]$

b. $\left[\begin{array}{cccc|c} 2 & 7 & 5 & -2 & 6 \\ -5 & 9 & -6 & 5 & 0 \\ 8 & -1 & -8 & -7 & 0 \\ 1 & -7 & 1 & 9 & 0 \end{array}\right]$

c. $\left[\begin{array}{cccc|c} 2 & 7 & 5 & -2 & 6 \\ 0 & -5 & 9 & -6 & 5 \\ 8 & -1 & -8 & -7 & 0 \\ 0 & 1 & -7 & 1 & 9 \end{array}\right]$

d. $\left[\begin{array}{cccc|c} 8 & -1 & -8 & -7 & 0 \\ 0 & -5 & 9 & -6 & 5 \\ 2 & 7 & 5 & -2 & 6 \\ 1 & -7 & 1 & 0 & 9 \end{array}\right]$

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Find the maximum and minimum values of the objective function $f(x, y)$ and for what values of x and y they occur, subject to the given constraints.

25. $f(x, y) = 3x + 3y$
$y \leq -4x - 6$
$y \leq 6x - 6$
$y \geq -4x + 54$

a. min at $(0, -6) = -18$, max at $(6, 30) = 108$
b. min at $(0, -6) = -18$, no max
c. max at $(6, 30) = 108$, no min
d. max at $(0, -6) = -18$, no min

26. Solve the system of equations using Gauss-Jordan elimination.

$-4x + 6y - 2z = -54$
$-14x + 18y - 12z = -140$
$-10x + 14y - 6z = -122$

a. $x = 4$, $y = -8$, and $z = -5$
b. $x = -9$, $y = 7$, and $z = 66$
c. $x = -7$, $y = 9$, and $z = -7$
d. no solution

27. Solve the system of equations.

$-3x + 3y - 9z + 42w = -42$
$-6x + 3y - 18z + 96w = -54$
$x - y + 2z - 10w = 11$

a. $(-8 - w, -7 + 10w, -2 - 10w, w)$
b. $(4 + 4w, 4 + 4w, 3 - 2w, w)$
c. $(4, -133, 1, 9)$
d. $(-5 + 6w, -10 + 4w, 3 + 4w, w)$

28. Use Cramer's Rule to find the solution of the system of linear equations, if a unique solution exists.

$3x + 4y + 5z = 31$
$4x - 4y - z = -53$
$-5x + 12y + 7z = 137$

a. $(7, -10, -1)$
b. $(-6, 6, 5)$
c. $(-6, -10, 0)$
d. no unique solution

29. Solve the system of equations.

$-10x - 24y + 80z = 396$
$-2x - 7y + 27z = 103$
$21x + 72y - 276z = -1068$

a. $x = -6$, $y = 7$, $z = 3$
b. $x = -8$, $y = -1$, $z = -1$
c. infinite solutions
d. no solution

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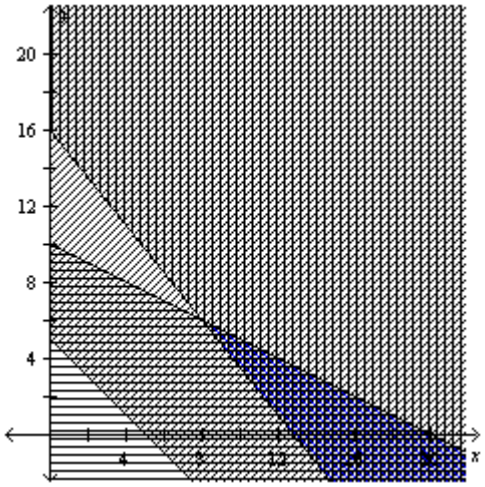
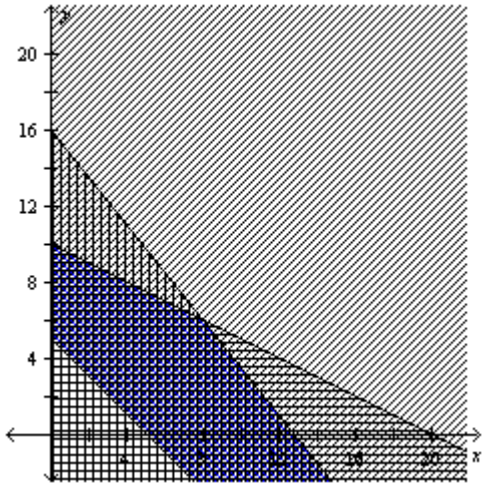
30. Graph the region corresponding to the solution of the system of constraints.

$f(x, y) = 3y + x$
$x \geq 0$
$y \geq -2$
$6x + 12y \leq 120$
$10x + 8y \leq 128$
$2x + 2y \geq 10$

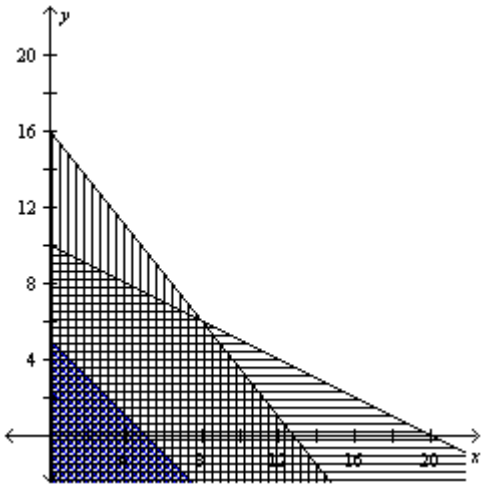
a.



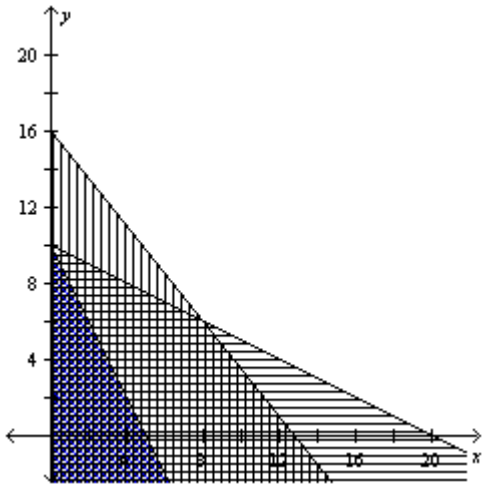
b.



c.



d.



31. If $A = \begin{bmatrix} 4 & 6 \\ -1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & 7 \\ 8 & -5 \end{bmatrix}$, find AB.

a. $\begin{bmatrix} 64 & -2 \\ 12 & -17 \end{bmatrix}$

b. $\begin{bmatrix} -64 & 2 \\ -12 & 17 \end{bmatrix}$

c. $\begin{bmatrix} 16 & 42 \\ -8 & -10 \end{bmatrix}$

d. Not possible

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32. Determine whether $A = \begin{bmatrix} -2 & -3 \\ 2 & -2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 \\ -1 & 2 \end{bmatrix}$ are inverse matrices.

a. No b. Yes

33. Find the partial fraction decomposition of the rational expression with irreducible quadratic factors, $\frac{x^3 - x + 8}{x^4 - 4x^2 + 4}$.

a. $\frac{x}{x^2 - 2} + \frac{x + 8}{(x^2 - 2)^2}$ b. $\frac{x}{(x^2 - 2)^2} + \frac{x + 8}{x^2 - 2}$

c. $\frac{x}{(x^2 - 2)^2} - \frac{x + 8}{x^2 - 2}$ d. $\frac{x}{x^2 - 2} - \frac{x + 8}{(x^2 - 2)^2}$

34. Find the partial fraction decomposition of the improper rational expression $\frac{3x^2 - 3x - 2}{x^2 - x - 30}$.

a. $3 + \frac{8}{x - 6} - \frac{8}{x + 5}$ b. $3 - \frac{8}{x - 6} + \frac{8}{x + 5}$

c. $3x + \frac{8}{x - 6} - \frac{8}{x + 5}$ d. $\frac{3}{x} + \frac{8}{x - 6} - \frac{8}{x + 5}$

35. Find the determinant of $C = \begin{bmatrix} 2 & -4 \\ -1 & -7 \end{bmatrix}$.

a. –30 b. –15

c. 18 d. –18

36. Solve the matrix equation by using inverse matrices.

$$\begin{bmatrix} 5 & 4 \\ -3 & 2 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} -8 \\ 18 \end{bmatrix}$$

a. $(-\frac{8}{9}, -18)$ b. (–4, 3)

c. $(\frac{4}{5}, 3)$ d. (4, –3)

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37. Find the determinant of $C = \begin{bmatrix} 3 & -2 \\ -5 & -7 \end{bmatrix}$.

a. –41 b. –31
c. 31 d. 95

38. Find the partial fraction decomposition of $\frac{-9x-50}{x^2+x-42}$.

a. $\frac{-1}{x+7}+\frac{-8}{x-6}$ b. $\frac{-1}{x+7}-\frac{-8}{x-6}$
c. $\frac{-8}{x+7}-\frac{-1}{x-6}$ d. $\frac{-8}{x+7}+\frac{-1}{x-6}$

39. Find the determinant of $C = \begin{bmatrix} 5 & -2 \\ -4 & -3 \end{bmatrix}$.

a. –26 b. –23
c. 23 d. 52

40. If $A = \begin{bmatrix} -1 & 8 & 1 \\ 5 & 8 & -1 \\ 2 & 3 & -5 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 9 & 3 \\ 1 & 5 & 9 \\ 5 & 7 & 2 \end{bmatrix}$, find BA.

a. $\begin{bmatrix} 48 & 82 & -22 \\ 43 & 76 & -48 \\ 35 & 100 & -13 \end{bmatrix}$ b. $\begin{bmatrix} 50 & 89 & -23 \\ 42 & 75 & -49 \\ 34 & 102 & -12 \end{bmatrix}$
c. $\begin{bmatrix} 51 & 88 & -24 \\ 41 & 75 & -54 \\ 32 & 99 & -18 \end{bmatrix}$ d. Not possible

41. Determine whether $A = \begin{bmatrix} -1 & -2 \\ 2 & -2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 \\ -1 & 2 \end{bmatrix}$ are inverse matrices.

a. No b. Yes

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42. If $A = \begin{bmatrix} 4 & 9 & 4 \\ -1 & 0 & -2 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & 5 \\ 4 & 1 \end{bmatrix}$, find AB.

a. $\begin{bmatrix} 52 & 29 \\ -4 & -5 \end{bmatrix}$

b. $\begin{bmatrix} 56 & 33 \\ -6 & -7 \end{bmatrix}$

c. $\begin{bmatrix} 16 & 45 & -1 \\ -4 & 0 & -2 \end{bmatrix}$

d. Not possible

43. If $A = \begin{bmatrix} 1 & 7 & -3 \\ 5 & 2 & 1 \\ -1 & 2 & -4 \end{bmatrix}$ and $B = \begin{bmatrix} 5 & 7 & 3 \\ -3 & 7 & 9 \\ 2 & 5 & 2 \end{bmatrix}$, find BA.

a. $\begin{bmatrix} 38 & 54 & -21 \\ 22 & 11 & -25 \\ 23 & 25 & -15 \end{bmatrix}$

b. $\begin{bmatrix} 35 & 50 & -18 \\ 24 & 10 & -22 \\ 27 & 30 & -4 \end{bmatrix}$

c. $\begin{bmatrix} 37 & 55 & -20 \\ 23 & 11 & -20 \\ 25 & 28 & -9 \end{bmatrix}$

d. Not possible

44. Find the inverse of $R = \begin{bmatrix} 0 & 0 \\ 4 & 3 \end{bmatrix}$, if it exists.

a. $\begin{bmatrix} 0 & 0 \\ 3 & 4 \end{bmatrix}$

b. $\begin{bmatrix} 0 & 0 \\ \frac{1}{4} & \frac{1}{3} \end{bmatrix}$

c. $\begin{bmatrix} 4 & 3 \\ 0 & 0 \end{bmatrix}$

d. R^{-1} does not exist.

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45. If $A = \begin{bmatrix} 5 & 8 \\ -5 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & 6 \\ 5 & -1 \end{bmatrix}$, find AB.

a. $\begin{bmatrix} -60 & -22 \\ -5 & 35 \end{bmatrix}$ b. $\begin{bmatrix} 60 & 22 \\ 5 & -35 \end{bmatrix}$

c. $\begin{bmatrix} 20 & 48 \\ -25 & -5 \end{bmatrix}$ d. Not possible

46. Write a matrix equation for the given systems of equations.

$2x - 6y - 2z = 1$

$3y - 2z = -5$

$2y + 2z = -3$

a. $\begin{bmatrix} 2-6-2 \\ 3-2 \\ 2+2 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ -5 \\ -3 \end{bmatrix}$ b. $\begin{bmatrix} 2 & -6 & -2 \\ 0 & 3 & -2 \\ 0 & 2 & 2 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ -5 \\ -3 \end{bmatrix}$

c. $\begin{bmatrix} 2 & -6 & -2 \\ 3 & -2 & 0 \\ 2 & 2 & 0 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ -5 \\ -3 \end{bmatrix}$ d. $\begin{bmatrix} 2 & -6 & -2 \\ 0 & 3 & -2 \\ 0 & 2 & 2 \end{bmatrix} \cdot \begin{bmatrix} 1 \\ -5 \\ -3 \end{bmatrix} = \begin{bmatrix} x \\ y \\ z \end{bmatrix}$

47. Solve the matrix equation by using inverse matrices.

$$\begin{bmatrix} 4 & 4 \\ -2 & 4 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 12 \\ 24 \end{bmatrix}$$

a. $(\frac{3}{2}, 12)$ b. $(8, 5)$

c. $(2, -5)$ d. $(-2, 5)$

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48. Find the inverse of $P = \begin{bmatrix} 2 & 4 \\ 3 & -1 \end{bmatrix}$, if it exists.

a. $\begin{bmatrix} -\frac{1}{7} & -\frac{2}{7} \\ \frac{3}{14} & -\frac{1}{7} \end{bmatrix}$

b. $\begin{bmatrix} \frac{1}{14} & \frac{2}{7} \\ \frac{3}{14} & -\frac{1}{7} \end{bmatrix}$

c. $\begin{bmatrix} \frac{1}{14} & \frac{2}{7} \\ -\frac{3}{14} & \frac{1}{14} \end{bmatrix}$

d. P^{-1} does not exist.

49. Find the partial fraction decomposition of the rational expression with repeated factors, $\frac{-6x^2 + 52x - 144}{x^3 - 12x^2 + 36x}$

a. $\frac{-4}{x} + \frac{-2}{x-6} + \frac{-8}{x-6}$

b. $-4 + \frac{2}{x-6} + \frac{-8}{x^2}$

c. $\frac{-4}{x} + \frac{-2}{x-6} + \frac{-8}{(x-6)^2}$

d. $\frac{-4}{x} + \frac{2}{x-6} + \frac{-8}{(x-6)^2}$

50. Find the partial fraction decomposition of the rational expression with irreducible quadratic factors, $\frac{x^3 - 7x + 6}{\left(x^2 - 8\right)^2}$.

a. $\frac{x}{x^2-8} + \frac{x+6}{(x^2-8)^2}$

b. $\frac{x}{x^2-8} - \frac{x+6}{(x^2-8)^2}$

c. $\frac{x}{(x^2-8)^2} - \frac{x+6}{x^2-8}$

d. $\frac{x}{(x^2-8)^2} + \frac{x+6}{x^2-8}$

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Answer Key

1. c

2. a

3. c

4. b

5. c

6. a

7. c

8. a

9. b

10. a

11. b

12. a

13. a

14. a

15. a

16. a

17. a

18. d

19. b

20. b

21. b

22. b

23. b

24. d

25. c

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26. a

27. d

28. d

29. d

30. b

31. a

32. a

33. a

34. a

35. d

36. b

37. b

38. a

39. b

40. b

41. a

42. d

43. c

44. d

45. b

46. b

47. d

48. b

49. c

50. a