

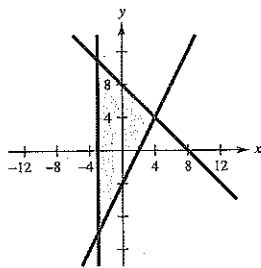
64. Yes. $|2A| = 8|A| = 8(5) = 40$

66. (a) -5 times Row 1 is added to Row 2.

(b) -2 times Row 2 is added to Row 1.

68. $(2, -4)$ 70. $(-\frac{130}{17}, \frac{19}{51})$

72.



74. $\begin{bmatrix} \frac{1}{4} & \frac{1}{4} \\ 2 & 1 \end{bmatrix}$ 76. Does not exist

Section 8.5 (page 607)

2. $\frac{31}{2}$ 4. $\frac{33}{2}$ 6. $\frac{123}{8}$ 8. $\frac{25}{2}$ 10. $x = 19, 3$

12. Not collinear 14. Collinear 16. $x = 3$

18. $(-1, 2)$ 20. $(7, 5)$ 22. $(\frac{8}{5}, -\frac{83}{10})$

24. $(5, 8, -2)$ 26. Cramer's Rule does not apply.

28. 3100 square feet

30. Uncoded: $[16, 12, 5], [1, 19, 5], [0, 19, 5], [14, 4, 0], [13, 15, 14], [5, 25, 0]$

Encoded: $43 \ 6 \ 9 \ -38 \ -45 \ -13 \ -42 \ -47 \ -14$
 $44 \ 16 \ 10 \ 49 \ 9 \ 12 \ -55 \ -65 \ -20$

32. $13 \ 19 \ 10 \ -1 \ -33 \ -77 \ 3 \ -2 \ -14 \ 4 \ 1 \ -9 \ -5$
 $-25 \ -47 \ 4 \ 1 \ -9$

34. $58 \ 122 \ 139 \ 1 \ -37 \ -95 \ 40 \ 67 \ 55 \ 23 \ 17 \ -19 \ 47$
 $88 \ 88 \ 65 \ 140 \ 164$

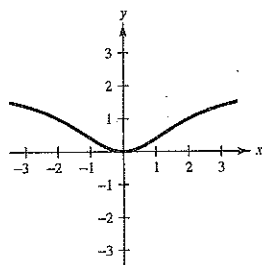
36. BRONCOS WIN SUPER BOWL

38. RETURN AT DAWN 40. CANCEL ORDERS SUE

42. False. It could have infinitely many solutions.

44. $x + 4y - 19 = 0$ 46. $2x - 7y - 27 = 0$

48. 50. $(-1, 0, -3)$



Review Exercises (page 610)

2. 2×4 4. 1×5 6. 2×3

8. $\begin{bmatrix} -1 & 1 & \vdots & 12 \\ 10 & -4 & \vdots & -90 \end{bmatrix}$

10. $\begin{bmatrix} 3 & -5 & 1 & \vdots & 25 \\ -4 & 0 & -2 & \vdots & -14 \\ 6 & 1 & 0 & \vdots & 15 \end{bmatrix}$

12. $\begin{cases} 13x + 16y + 7z + 3w = 2 \\ x + 21y + 8z + 5w = 12 \\ 4x + 10y - 4z + 3w = -1 \end{cases}$

14. $\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$

16. $\begin{bmatrix} 1 & 0 & 0 & -6 & -4 & 3 \\ 0 & 1 & 0 & 11 & 6 & -5 \\ 0 & 0 & 1 & -2 & -1 & 1 \end{bmatrix}$ 18. $\begin{bmatrix} 1 & 0 & \frac{8}{7} \\ 0 & 1 & \frac{10}{7} \\ 0 & 0 & 0 \end{bmatrix}$

20. $(-9, -4)$ 22. $(0.6, 0.5)$ 24. Inconsistent

26. Inconsistent 28. $(\frac{31}{42}, \frac{5}{14}, \frac{13}{84})$ 30. $(6, -2, 0)$

32. $(1, 2)$ 34. $(-2, 1, 1)$ 36. Inconsistent

38. $x = 8, y = 0$ 40. $x = 12, y = -2$

42. Not possible. The difference of two matrices of different orders is undefined.

44. $\begin{bmatrix} 54 & 4 \\ -2 & 24 \\ -4 & 32 \end{bmatrix}$ 46. $\begin{bmatrix} -26 & -4 & 8 & 10 \\ 40 & -36 & 58 & -62 \end{bmatrix}$

48. $\begin{bmatrix} 6 & -8 \\ -11 & 54 \\ -44 & 2 \end{bmatrix}$ 50. $\frac{1}{6} \begin{bmatrix} -13 & 6 \\ -2 & -17 \\ 0 & 20 \end{bmatrix}$

52. $\frac{1}{3} \begin{bmatrix} -13 & -10 \\ 12 & -15 \\ -26 & -16 \end{bmatrix}$ 54. Not possible

56. $\begin{bmatrix} 4 & 6 & 3 \\ 0 & 6 & -10 \\ 0 & 0 & 6 \end{bmatrix}$ 58. $\begin{bmatrix} 4 & -3 \\ 82 & -48 \end{bmatrix}$ 60. $\begin{bmatrix} 13 & 24 \\ 20 & 4 \end{bmatrix}$

62. $\begin{bmatrix} 2 & 3 & 1 \\ 2 & -3 & -3 \\ 4 & -2 & 3 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 10 \\ 22 \\ -2 \end{bmatrix}$

64. $A_n = \begin{bmatrix} 10,250 & 9250 \\ 8125 & 12,250 \\ 6750 & 6000 \end{bmatrix}$

$BA_n = [\$342,687.50 \quad \$378,937.50]$

66. and 68. Answers will vary. 70. $\begin{bmatrix} 3 & 5 \\ -2 & -3 \end{bmatrix}$

72. $\begin{bmatrix} 1 & 11 & 8 \\ -1 & -7 & -5 \\ -1 & -14 & -10 \end{bmatrix}$ 74. $\frac{1}{46} \begin{bmatrix} 2 & 10 \\ -4 & 3 \end{bmatrix}$

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