

pg P27: 1-12, 17-18, 24-26, 32-36,  
pg 303: 2-5, 8-11

1.  $2 \times 2$     2.  $3 \times 2$     3.  $2 \times 4$     4.  $3 \times 3$

5. 36    6. 24    7. 29    8. 28

9. -11    10. 17

11.  $W + X$

$$\begin{bmatrix} 13 & -6 \\ 2 & -10 \\ -4 & 8 \end{bmatrix} + \begin{bmatrix} 1 & -3 \\ -5 & 9 \\ 12 & 7 \end{bmatrix} = \begin{bmatrix} 14 & -9 \\ -3 & -1 \\ 8 & 15 \end{bmatrix}$$

12.  $Z - X$  not possible

$$17. A + B \begin{bmatrix} 42 & 56 & 85 \\ 41 & 57 & 89 \\ 45 & 53 & 84 \end{bmatrix} + \begin{bmatrix} 51 & 45 & 79 \\ 53 & 48 & 81 \\ 56 & 46 & 83 \end{bmatrix} = \begin{bmatrix} 93 & 101 & 164 \\ 94 & 105 & 170 \\ 101 & 99 & 167 \end{bmatrix}$$

$$18. 2 \begin{bmatrix} 6 & -18 & 7 \\ 3 & 4 & 11 \end{bmatrix} = \begin{bmatrix} 12 & -36 & 14 \\ 6 & 8 & 22 \end{bmatrix}$$

24. \$4.50 child    \$6.75 adult

$$C = 6 \begin{bmatrix} 4.5 & 4.5 & 6.75 \end{bmatrix}$$

$$C = \begin{bmatrix} 27 & 27 & 40.5 \end{bmatrix}$$

$$\text{Total Cost} = \$94.50$$

25.  $2D + E$

$$2D = \begin{bmatrix} -4 & 10 \\ 18 & -22 \\ 8 & -14 \end{bmatrix} + E = \begin{bmatrix} 8 & 10 \\ -5 & 5 \\ 1 & -12 \end{bmatrix} = \begin{bmatrix} 4 & 20 \\ 13 & -17 \\ 9 & -26 \end{bmatrix}$$

26.  $3(E - F)$

$$E - F = \begin{bmatrix} 3 & 11 \\ -1 & 3 \\ -5 & -22 \end{bmatrix} \quad 3(E - F) = \begin{bmatrix} 9 & 33 \\ -3 & 9 \\ -15 & -66 \end{bmatrix}$$

32.  $L - K = \frac{1}{3}X \quad X = 3(L - K)$

$$L - K = \begin{bmatrix} 2 & -4 & 1 \\ 17 & -14 & 9 \end{bmatrix} \quad 3(L - K) = \begin{bmatrix} 6 & -12 & 3 \\ 51 & -42 & 27 \end{bmatrix} = X$$

33.  $2J - L = 3X \quad \frac{1}{3}(2J - L)$

$$2J = \begin{bmatrix} 16 & -20 & 6 \\ -8 & 2 & 24 \end{bmatrix} \quad 2J - L = \begin{bmatrix} 12 & -21 & 14 \\ -19 & 9 & -4 \end{bmatrix} \quad X = \frac{1}{3}(2J - L)$$

$$X = \begin{bmatrix} 4 & -7 & \frac{14}{3} \\ -\frac{19}{3} & 3 & -\frac{4}{3} \end{bmatrix}$$

34.  $3K - X = J \quad 3K - J = X$

$$3K = \begin{bmatrix} 6 & 15 & -27 \\ -18 & 21 & -9 \end{bmatrix} \quad 3K - J = \begin{bmatrix} -2 & 25 & -36 \\ -14 & 20 & -21 \end{bmatrix} = X$$

$$35. 3L - 2K = X$$

$$3L = \begin{bmatrix} 12 & 3 & -24 \\ 33 & -21 & 18 \end{bmatrix} \quad 2K = \begin{bmatrix} 4 & 10 & -18 \\ -12 & 14 & -6 \end{bmatrix}$$

$$3L - 2K = \begin{bmatrix} 8 & -7 & -4 \\ 50 & -35 & 24 \end{bmatrix}$$

$$36. 2(J - X) = -L \quad J - X = -\frac{1}{2}L \quad J + \frac{1}{2}L = X$$

$$\frac{1}{2}L = \begin{bmatrix} 2 & \frac{1}{2} & -4 \\ \frac{11}{2} & -\frac{7}{2} & 3 \end{bmatrix} \quad J + \frac{1}{2}L = \begin{bmatrix} 10 & -9.5 & -1 \\ -9.5 & -2.5 & 9 \end{bmatrix} = X$$

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$$2 \quad \begin{cases} 3x + y = 14 \\ 2x - 2y = -4 \end{cases} \quad y = -3x + 14$$

$$\begin{aligned} 2x - 2(-3x + 14) &= -4 \\ 2x + 6x - 28 &= -4 \\ 8x &= 24 \\ x &= 3 \end{aligned}$$

$$\begin{aligned} 3(3) + y &= 14 \\ 9 + y &= 14 \\ y &= 5 \end{aligned}$$

$$(3, 5)$$

$$3. \quad \left. \begin{aligned} x + 3y &= 10 \\ -2x + 3y &= 16 \\ +2x - 3y &= -16 \end{aligned} \right\}$$

$$\begin{aligned} 3x &= -6 \\ x &= -2 \end{aligned}$$

$$\begin{aligned} -2 + 3y &= 10 \\ 3y &= 12 \\ y &= 4 \end{aligned}$$

$$(-2, 4)$$

$$4. \quad \left. \begin{aligned} 4x + 2y &= -34 \\ -3x - y &= 24 \\ -6x - 2y &= 48 \end{aligned} \right\} \times 2$$

$$\begin{aligned} -2x &= 14 \\ x &= -7 \end{aligned}$$

$$\begin{aligned} 4(-7) + 2y &= -34 \\ -28 + 2y &= -34 \\ 2y &= -6 \\ y &= -3 \end{aligned}$$

$$(-7, -3)$$

$$5. \begin{cases} 2x + 5y = -16 & \times 3 \\ 3x + 4y = -17 & \times 2 \end{cases} \quad \begin{matrix} z: \\ \bar{x} 2 \end{matrix}$$

$$\begin{array}{r} 6x + 15y = -48 \\ -6x - 8y = 34 \\ \hline \end{array}$$

$$\begin{aligned} 7y &= 14 \\ y &= -2 \end{aligned}$$

$$\begin{aligned} 2x + 5(-2) &= -16 \\ 2x - 10 &= -16 \\ 2x &= -6 \\ x &= -3 \end{aligned}$$

$$\boxed{(-3, -2)}$$

$$8. A + 3C$$

$$3C = \begin{bmatrix} 0 & 33 & -9 \\ 27 & -9 & 15 \end{bmatrix} + A = \begin{bmatrix} 3 & 28 & -8 \\ 20 & -3 & 19 \end{bmatrix}$$

$$9. 2(B - A)$$

$$B - A = \begin{bmatrix} -6 & -4 & 0 \\ 17 & 2 & -5 \end{bmatrix} \quad 2(B - A) = \begin{bmatrix} -12 & -8 & 0 \\ 34 & 4 & -10 \end{bmatrix}$$

$$10. 2A + 3B$$

$$2A = \begin{bmatrix} 6 & -10 & 2 \\ -14 & 12 & 8 \end{bmatrix} \quad 3B = \begin{bmatrix} -6 & -27 & 3 \\ 30 & 24 & -3 \end{bmatrix} \quad 2A + 3B = \begin{bmatrix} 0 & -37 & 5 \\ 16 & 36 & 5 \end{bmatrix}$$

$$11. 3C + 2A$$

$$3C = \begin{bmatrix} 0 & 33 & -9 \\ 27 & -9 & 15 \end{bmatrix} \quad 3C + 2A = \begin{bmatrix} 6 & 23 & -7 \\ 13 & -3 & 28 \end{bmatrix}$$