

Algebra 3 Assignment # 5 — Review Worksheet

- (1) Ed has \$15 consisting of only dimes and quarters. He has a total of 90 coins. How many coins of each type does he have?
- (2) An adult ticket to a play costs \$6, while a child's ticket costs \$3. If 120 people attended the play, and the gross receipts were \$600, how many tickets of each type were sold?
- (3) Solve each of the following systems using any method please.

$$\begin{aligned} \text{(a)} \quad & 5x + 3y = -2 \\ & 6x - 7y = 10 \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad & \frac{x + 2y}{4} - \frac{2x + 3}{6} = \frac{y - 2}{3} \\ & \frac{2x - y}{5} + \frac{x + 2y}{10} = \frac{3}{2} \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad & \frac{2}{3}x - \frac{3}{4}y = \frac{5}{2} \\ & \frac{2}{5}x + \frac{1}{2}y = -\frac{3}{10} \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad & x + y + z = -1 \\ & 3x - 2y - 4z = 16 \\ & 2x - y + z = 19 \end{aligned}$$

$$\begin{aligned} \text{(e)} \quad & x + 2y + 2z = 13 \\ & 2x + y - z = 3 \\ & x - 4y + 3z = 11 \end{aligned}$$

$$\begin{aligned} \text{(f)} \quad & x^2 - y^2 = 16 \\ & x - y = 2 \end{aligned}$$

$$\begin{aligned} \text{(g)} \quad & (x + 1)^2 + (y - 1)^2 = 10 \\ & x^2 + y^2 = 4 \end{aligned}$$

$$\begin{aligned} \text{(h)} \quad & 4x^2 + y^2 + 2x - 5y = 0 \\ & 2x - 3y = -4 \end{aligned}$$

- (4) Evaluate each of the following determinants please.

$$\text{(a)} \quad \begin{vmatrix} 5 & 3 \\ -2 & 4 \end{vmatrix}$$

$$\text{(b)} \quad \begin{vmatrix} 2 & 4 & -2 \\ -1 & -3 & 1 \\ 0 & 5 & -3 \end{vmatrix}$$

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Answers

(1) 50 dimes, 40 quarters

(2) 80 adult tickets, 40 child's tickets

(3) (a) $\left(\frac{16}{53}, -\frac{62}{53} \right)$

(b) $\left(3, \frac{1}{2} \right)$

(c) $\left(\frac{123}{76}, -\frac{36}{19} \right)$

(d) $(4, -8, 3)$

(e) $(3, 1, 4)$

(f) $(5, 3)$

(g) $(2, 0), (0, -2)$

(h) $(1, 2), \left(-\frac{11}{10}, \frac{3}{5} \right)$

(4) (a) 26

(b) 6