

Assignment #2 - 3x3 Systems of Equations

Date _____ Period _____

Solve each system.

$$\begin{aligned} 1) \quad & 3x + y - 3z = 10 \\ & -3x + 4z = -17 \\ & 5x + y - z = 12 \end{aligned}$$

$$\begin{aligned} 2) \quad & -x + 2y + 6z = 5 \\ & 4x + 4y + z = 16 \\ & 3x - 2y - 2z = -3 \end{aligned}$$

$$\begin{aligned} 3) \quad & z = -2y - 2 \\ & -3x + 2y - 6z = 1 \\ & 2x + z = -2 \end{aligned}$$

$$\begin{aligned} 4) \quad & -a + 2c = -3 \\ & a - 4b + c = -19 \\ & -5a - 2b - 4c = 5 \end{aligned}$$

$$\begin{aligned}
 5) \quad & 4r - 5s - t = 17 \\
 & -r - 3s - 6t = -27 \\
 & 5s - 2t = -20
 \end{aligned}$$

$$\begin{aligned}
 6) \quad & r = s + 2t - 8 \\
 & -4r + 2s + 2t = 12 \\
 & -3r - 3t = -6
 \end{aligned}$$

$$\begin{aligned}
 7) \quad & r + 5s - 3t = 13 \\
 & -2r + 3t = 5 \\
 & -5r - s = -14
 \end{aligned}$$

$$\begin{aligned}
 8) \quad & 2x + y + z = -4 \\
 & -36x + 12y - 18z = 17 \\
 & 12y + 6z = -13
 \end{aligned}$$

$$\begin{aligned}
 9) \quad & \frac{5}{13}a + \frac{3}{13}b + \frac{6}{13}c = -2 \\
 & \frac{1}{2}b - \frac{5}{2}c = 14 \\
 & \frac{1}{2}a + b + \frac{3}{2}c = -5
 \end{aligned}$$

$$\begin{aligned}
 10) \quad & -3a + 3b + 6c = -9 \\
 & a - 3b - c = -6 \\
 & 2a - c = 11
 \end{aligned}$$

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Solve each system.

1) $3x + y - 3z = 10$

$-3x + 4z = -17$

$5x + y - z = 12$

$(3, -5, -2)$

2) $-x + 2y + 6z = 5$

$4x + 4y + z = 16$

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

$(1, 3, 0)$

3) $z = -2y - 2$

$-3x + 2y - 6z = 1$

$2x + z = -2$

$(-1, -1, 0)$

4) $-a + 2c = -3$

$a - 4b + c = -19$

$-5a - 2b - 4c = 5$

$(-1, 4, -2)$

$$\begin{aligned}
 5) \quad & 4r - 5s - t = 17 \\
 & -r - 3s - 6t = -27 \\
 & 5s - 2t = -20 \\
 & (3, -2, 5)
 \end{aligned}$$

$$\begin{aligned}
 6) \quad & r = s + 2t - 8 \\
 & -4r + 2s + 2t = 12 \\
 & -3r - 3t = -6 \\
 & \text{Infinitely many solutions}
 \end{aligned}$$

$$\begin{aligned}
 7) \quad & r + 5s - 3t = 13 \\
 & -2r + 3t = 5 \\
 & -5r - s = -14 \\
 & (2, 4, 3)
 \end{aligned}$$

$$\begin{aligned}
 8) \quad & 2x + y + z = -4 \\
 & -36x + 12y - 18z = 17 \\
 & 12y + 6z = -13 \\
 & \left(-\frac{11}{6}, -\frac{11}{6}, \frac{3}{2} \right)
 \end{aligned}$$

$$\begin{aligned}
 9) \quad & \frac{5}{13}a + \frac{3}{13}b + \frac{6}{13}c = -2 \\
 & \frac{1}{2}b - \frac{5}{2}c = 14 \\
 & \frac{1}{2}a + b + \frac{3}{2}c = -5 \\
 & (-1, 3, -5)
 \end{aligned}$$

$$\begin{aligned}
 10) \quad & -3a + 3b + 6c = -9 \\
 & a - 3b - c = -6 \\
 & 2a - c = 11 \\
 & (5, 4, -1)
 \end{aligned}$$