

Solving 3x3 Systems

Name: _____

Solve each system of linear equations.

$$1) \begin{cases} -2x + y + 3z = 20 \\ -3x + 2y + z = 21 \\ 3x - 2y + 3z = -9 \end{cases}$$

$(-4, 3, 3)$

$$2) \begin{cases} 3x - 12y + 15z = 9 \\ x - 4y + 5z = 3 \\ -2x + 8y - 10z = -6 \end{cases}$$

Infinitely many

$$3) \begin{cases} x + 2y + z = 8 \\ 2x + y - z = 4 \\ x + y + 3z = 7 \end{cases}$$

$(1, 3, 1)$

$$4) \begin{cases} 2x - y - 3z = 1 \\ 4x + 3y + 2z = -4 \\ -3x + 2y + 5z = -3 \end{cases}$$

(2, -6, 3)

$$5) \begin{cases} 2a - 4b + 6c = 5 \\ -a + 3b - 2c = -1 \\ a - 2b + 3c = 1 \end{cases}$$

No solution

$$6) \begin{cases} x + 2y + 3z = 9 \\ x + 3y + 2z = 5 \\ x - 4y - z = -5 \end{cases}$$

(-2, -0.2, 3.8)