

## Algebra II Practice A.REI.C.6: Solving Linear Systems 6b

Solve each system.

$$\begin{aligned} 1) \quad & a + 3b - c = 8 \\ & 4a + b + 6c = 17 \\ & -a + c = 7 \end{aligned}$$

$$\begin{aligned} 2) \quad & b + c = -1 \\ & -4a + 2b - 3c = -16 \\ & 2a - 6b = 20 \end{aligned}$$

$$\begin{aligned} 3) \quad & 2x - 4y + z = -11 \\ & z = 3y \\ & y = -4x - 19 \end{aligned}$$

$$\begin{aligned} 4) \quad & 3x - 3y = 15 \\ & x = -5y - 2z - 2 \\ & z = -3x + 15 \end{aligned}$$

$$\begin{aligned} 5) \quad & r + s - 5t = 1 \\ & 6r + s = 21 \\ & 3r + 5s + 5t = -3 \end{aligned}$$

$$\begin{aligned} 6) \quad & -3a - 4c = 0 \\ & b = -1 \\ & -3a - 3b + 2c = 21 \end{aligned}$$

$$\begin{aligned} 7) \quad & -4r - 3s + 6t = 30 \\ & 2r + 6s + 3t = 30 \\ & -2r - 5s + t = -4 \end{aligned}$$

$$\begin{aligned} 8) \quad & -5r + 5s - 5t = 15 \\ & 2r + s - 6t = -25 \\ & -2r - 3s - 2t = 11 \end{aligned}$$

$$\begin{aligned} 9) \quad & -5r + 2s = -6 \\ & 2r - 3s + t = -4 \\ & -5s - t = -8 \end{aligned}$$

$$\begin{aligned} 10) \quad & 3a - 5b + c = 28 \\ & a = 2b + 10 \\ & -a - 2c = -6 \end{aligned}$$

$$\begin{aligned} 11) \quad & s = -4r + 11 \\ & -5r - 2s = -13 \\ & -3r + 3s - 4t = -20 \end{aligned}$$

$$\begin{aligned} 12) \quad & -6x + 2y + z = 11 \\ & -5x + 6z = 9 \\ & 5x + 5y - 3z = -27 \end{aligned}$$

$$\begin{aligned} 13) \quad & -4a + 6c = 18 \\ & 2a + 2c = 16 \\ & -3a + 5b + c = 1 \end{aligned}$$

$$\begin{aligned} 14) \quad & t = -1 \\ & -2r - s + t = 10 \\ & -r - 2s + 4t = 3 \end{aligned}$$

$$\begin{aligned} 15) \quad & 3c = 9 \\ & -5a - 6b - 5c = -19 \\ & 6a + b - 3c = 2 \end{aligned}$$

$$\begin{aligned} 16) \quad & 5a + 4b + 6c = 18 \\ & a - 6b + 5c = 21 \\ & 6a - 3b - 2c = 28 \end{aligned}$$

$$\begin{aligned} 17) \quad & -6x + 6y - 4z = 20 \\ & 6x + 4y = 8 \\ & 3x + y - 2z = 6 \end{aligned}$$

$$\begin{aligned} 18) \quad & 3b - 5c = 22 \\ & 2a - 2b - 4c = 20 \\ & -5b - 2c = 15 \end{aligned}$$

$$\begin{aligned} 19) \quad & 6r + 3s - 4t = -10 \\ & -4r + t = 0 \\ & -5r - s + 2t = 3 \end{aligned}$$

$$\begin{aligned} 20) \quad & 4x - y + 4z = 3 \\ & 5x + 2y + 6z = -12 \\ & 3x - 6y + 3z = 18 \end{aligned}$$

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$$\begin{aligned} 1) \quad & a + 3b - c = 8 \\ & 4a + b + 6c = 17 \\ & -a + c = 7 \end{aligned}$$

$$(-3, 5, 4)$$

$$\begin{aligned} 2) \quad & b + c = -1 \\ & -4a + 2b - 3c = -16 \\ & 2a - 6b = 20 \end{aligned}$$

$$(1, -3, 2)$$

$$\begin{aligned} 3) \quad & 2x - 4y + z = -11 \\ & z = 3y \\ & y = -4x - 19 \end{aligned}$$

$$(-5, 1, 3)$$

$$\begin{aligned} 4) \quad & 3x - 3y = 15 \\ & x = -5y - 2z - 2 \\ & z = -3x + 15 \end{aligned}$$

No solution

$$\begin{aligned} 5) \quad & r + s - 5t = 1 \\ & 6r + s = 21 \\ & 3r + 5s + 5t = -3 \end{aligned}$$

$$(4, -3, 0)$$

$$\begin{aligned} 6) \quad & -3a - 4c = 0 \\ & b = -1 \\ & -3a - 3b + 2c = 21 \end{aligned}$$

$$(-4, -1, 3)$$

$$\begin{aligned} 7) \quad & -4r - 3s + 6t = 30 \\ & 2r + 6s + 3t = 30 \\ & -2r - 5s + t = -4 \end{aligned}$$

$$(0, 2, 6)$$

$$\begin{aligned} 8) \quad & -5r + 5s - 5t = 15 \\ & 2r + s - 6t = -25 \\ & -2r - 3s - 2t = 11 \end{aligned}$$

$$(-6, -1, 2)$$

$$\begin{aligned} 9) \quad & -5r + 2s = -6 \\ & 2r - 3s + t = -4 \\ & -5s - t = -8 \end{aligned}$$

$$(2, 2, -2)$$

$$\begin{aligned} 10) \quad & 3a - 5b + c = 28 \\ & a = 2b + 10 \\ & -a - 2c = -6 \end{aligned}$$

Infinitely many solutions

$$\begin{aligned} 11) \quad & s = -4r + 11 \\ & -5r - 2s = -13 \\ & -3r + 3s - 4t = -20 \\ & (3, -1, 2) \end{aligned}$$

$$\begin{aligned} 12) \quad & -6x + 2y + z = 11 \\ & -5x + 6z = 9 \\ & 5x + 5y - 3z = -27 \\ & (-3, -3, -1) \end{aligned}$$

$$\begin{aligned} 13) \quad & -4a + 6c = 18 \\ & 2a + 2c = 16 \\ & -3a + 5b + c = 1 \\ & (3, 1, 5) \end{aligned}$$

$$\begin{aligned} 14) \quad & t = -1 \\ & -2r - s + t = 10 \\ & -r - 2s + 4t = 3 \\ & (-5, -1, -1) \end{aligned}$$

$$\begin{aligned} 15) \quad & 3c = 9 \\ & -5a - 6b - 5c = -19 \\ & 6a + b - 3c = 2 \\ & (2, -1, 3) \end{aligned}$$

$$\begin{aligned} 16) \quad & 5a + 4b + 6c = 18 \\ & a - 6b + 5c = 21 \\ & 6a - 3b - 2c = 28 \\ & (4, -2, 1) \end{aligned}$$

$$\begin{aligned} 17) \quad & -6x + 6y - 4z = 20 \\ & 6x + 4y = 8 \\ & 3x + y - 2z = 6 \\ & (0, 2, -2) \end{aligned}$$

$$\begin{aligned} 18) \quad & 3b - 5c = 22 \\ & 2a - 2b - 4c = 20 \\ & -5b - 2c = 15 \\ & (-1, -1, -5) \end{aligned}$$

$$\begin{aligned} 19) \quad & 6r + 3s - 4t = -10 \\ & -4r + t = 0 \\ & -5r - s + 2t = 3 \\ & (1, 0, 4) \end{aligned}$$

$$\begin{aligned} 20) \quad & 4x - y + 4z = 3 \\ & 5x + 2y + 6z = -12 \\ & 3x - 6y + 3z = 18 \\ & (6, -3, -6) \end{aligned}$$