

## Linear Systems in Three Variables

Solve the following systems of equations

$$\begin{aligned} 1. \quad & 2p + q - r = 8 \\ & q + r = 4 \\ & p - q = 2. \end{aligned}$$

$$\begin{aligned} 2. \quad & x + y = 3 \\ & y + z = 6 \\ & x + z = 5 \end{aligned}$$

$$\begin{aligned} 3. \quad & r = 2(s - t) \\ & 2t = 3(s - r) \\ & r + t = 2s - 3 \end{aligned}$$

$$\begin{aligned} 4. \quad & 2a + 4b + c = 5 \\ & a - 4b = -6 \\ & 2b + c = 7 \end{aligned}$$

$$\begin{aligned} 5. \quad & 2x + y - z = -5 \\ & 4x - 2y + z = 10 \\ & 2x + 3y + 2z = 3 \end{aligned}$$

$$\begin{aligned} 6. \quad & r + 3s + t = 3 \\ & 2r - 3s + 2t = 3 \\ & -r + 3s - 3t = 1 \end{aligned}$$

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Solve the following systems of equations

$$\begin{aligned} 1. \quad & 2p + q - r = 8 \\ & q + r = 4 \\ & p - q = 2. \end{aligned}$$

$$p = 4, q = 2, r = 2$$

$$\begin{aligned} 2. \quad & x + y = 3 \\ & y + z = 6 \\ & x + z = 5 \end{aligned}$$

$$x = 1, y = 2, z = 4$$

$$\begin{aligned} 3. \quad & r = 2(s - t) \\ & 2t = 3(s - r) \\ & r + t = 2s - 3 \end{aligned}$$

$$r = 2, s = 4, t = 3$$

$$\begin{aligned} 4. \quad & 2a + 4b + c = 5 \\ & a - 4b = -6 \\ & 2b + c = 7 \end{aligned}$$

$$a = -2, b = 1, c = 5$$

$$\begin{aligned} 5. \quad & 2x + y - z = -5 \\ & 4x - 2y + z = 10 \\ & 2x + 3y + 2z = 3 \end{aligned}$$

$$x = \frac{1}{2}, y = -2, z = 4$$

$$\begin{aligned} 6. \quad & r + 3s + t = 3 \\ & 2r - 3s + 2t = 3 \\ & -r + 3s - 3t = 1 \end{aligned}$$

$$r = 3, s = \frac{1}{3}, t = -1$$