

## Linear Systems in Three Variables

Solve the following systems of equations

$$\begin{aligned} 1. \quad x - y &= 1 \\ 2y + z &= -4 \\ x - 2z &= -6 \end{aligned}$$

$$\begin{aligned} 2. \quad p + q + 3r &= 4 \\ 2q + 3r &= 7 \\ p - q - r &= -2 \end{aligned}$$

$$\begin{aligned} 3. \quad \frac{1}{x} + \frac{1}{y} + \frac{1}{z} &= 5 \\ \frac{1}{x} + \frac{1}{y} &= 2 \\ \frac{1}{x} - \frac{1}{z} &= -2 \end{aligned}$$

$$\begin{aligned} 4. \quad \frac{1}{a} + \frac{1}{b} + \frac{1}{c} &= 6 \\ \frac{1}{b} + \frac{1}{c} &= 5 \\ \frac{1}{a} - \frac{1}{b} &= -1 \end{aligned}$$

## Linear Systems in Three Variables

Solve the following systems of equations

$$\begin{aligned} 1. \quad x - y &= 1 \\ 2y + z &= -4 \\ x - 2z &= -6 \end{aligned}$$

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

$$\begin{aligned} 2. \quad p + q + 3r &= 4 \\ 2q + 3r &= 7 \\ p - q - r &= -2 \end{aligned}$$

$$p = 2, q = 5, r = -1$$

$$\begin{aligned} 3. \quad \frac{1}{x} + \frac{1}{y} + \frac{1}{z} &= 5 \\ \frac{1}{x} + \frac{1}{y} &= 2 \\ \frac{1}{x} - \frac{1}{z} &= -2 \end{aligned}$$

$$x = 1, y = 1, z = \frac{1}{3}$$

$$\begin{aligned} 4. \quad \frac{1}{a} + \frac{1}{b} + \frac{1}{c} &= 6 \\ \frac{1}{b} + \frac{1}{c} &= 5 \\ \frac{1}{a} - \frac{1}{b} &= -1 \end{aligned}$$

$$a = 1, b = \frac{1}{2}, c = \frac{1}{3}$$