

Handout 4- Solving Systems in Three Variables - Answers

Solve the following linear systems algebraically.

$$\begin{array}{rcl} x + y + z & = & 1 \\ 1. \quad 2x + y + 2z & = & 2 \\ 3x + y + z & = & 3 \end{array}$$

(1, 0, 0)

$$\begin{array}{rcl} 6x - 3y - 3z & = & 6 \\ 6. \quad 2x - y - 2z & = & 4 \\ 3x - 2y - z & = & 6 \end{array}$$

(-4, -8, -2)

$$\begin{array}{rcl} x + y & = & 1 \\ 2. \quad 2x - 2y - z & = & 1 \\ x - y - z & = & -2 \end{array}$$

(2, -1, 5)

$$\begin{array}{rcl} -6x + 3y - 3z & = & 3 \\ 7. \quad -2x - y - 2z & = & 2 \\ -3x + 2y - z & = & 3 \end{array}$$

(-6, -4, 7)

$$\begin{array}{rcl} -x + y + z & = & 3 \\ 3. \quad 3x - 2y - z & = & 1 \\ x + y + z & = & 1 \end{array}$$

(-1, -6, 8)

$$\begin{array}{rcl} -6x + 3y + 2z & = & 3 \\ 8. \quad -x + y & = & 2 \\ x + 2y - z & = & 1 \end{array}$$

(-3, -1, -6)

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

(2, 1, 0)

$$\begin{array}{rcl} 2x + y - 2z & = & 2 \\ 9. \quad -x + y + 2z & = & 2 \\ 2x + 2y - z & = & 2 \end{array}$$

(-8, 6, -6)

$$\begin{array}{rcl} 6x - 4y + 4z & = & 6 \\ 5. \quad 2x + 2y + 4z & = & 4 \\ 2x + 4z & = & 6 \end{array}$$

(-1, -1, 2)

$$\begin{array}{rcl} 6x + 3y - 3z & = & 6 \\ 10. \quad -2x + 2y + z & = & 1 \\ 4x + 4y - z & = & 4 \end{array}$$

(-0.5, 1, -2)