Solving Systems with Three Variables

$$x = 1$$
$$y = -2$$
$$z = 0$$

The Approach

Eliminate x from the EQ2 and EQ3

Eliminate y from EQ3

Elimination

Eliminate z from EQ2 and EQ1

Eliminate y from EQ1

Back-Substitution

Verifying the Solution

$$x - 2y + z = 5$$
$$2y - 8z = -4$$
$$6x + 5y + 9z = -4$$

$$x = 1$$
$$y = -2$$
$$z = 0$$