

Review #1 CP Algebra 2

Use elimination to solve each system.

$$\begin{aligned} 2x + y - z &= 5 \\ 1. \quad x + 4y + 2z &= 16 \\ 15x + 6y - 2z &= 12 \\ 16x + 10y &= 28 \end{aligned}$$

$$\begin{aligned} 48x + 30y &= 84 \\ -25x - 30y &= 130 \\ \hline 23x &= -46 \\ x &= -2 \end{aligned}$$

$$\begin{aligned} x - 2y + z &= -4 \\ 2. \quad -4x + y - 2z &= 1 \\ 2x + 2y - z &= 10 \end{aligned}$$

$$\begin{aligned} 3x &= 6 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} 2 - 2(1) + z &= -4 \\ z &= -4 \end{aligned}$$

$$\begin{aligned} 4x + 2y - 2z &= 10 \\ x + 4y + 2z &= 16 \\ \hline 5x + 6y &= 26 \end{aligned}$$

$$\begin{aligned} 5(-2) + 6y &= 26 \\ -10 + 6y &= 26 \\ 6y &= 36 \\ y &= 6 \end{aligned}$$

$$\begin{aligned} 2 - 2y + z &= -4 & \Rightarrow \\ -4(-2) + y - 2z &= 1 & \Rightarrow \end{aligned}$$

$$\begin{aligned} 2(-2) + 6 - z &= 5 \\ -4 + 6 - z &= 5 \\ 2 - z &= 5 \\ -z &= 3 \\ z &= -3 \end{aligned}$$

$$(-2, 6, -3)$$

$$\begin{aligned} -2y + z &= -6 \\ y - 2z &= 9 \\ \hline -4y + 2z &= -12 \\ -3y &= -3 \\ y &= 1 \end{aligned}$$

$$(-2, 1, -4)$$

Find a quadratic model for the set of values.

3. $(-1, 6)$ $(1, 4)$ $(2, 9)$

$$\begin{aligned} 6 &= a - b + c \\ 4 &= a + b + c \\ 9 &= 4a + 2b + c \\ -8 &= -2a - 2b - 2c \end{aligned}$$

$$1 = 2a - c$$

$$\begin{aligned} 10 &= 2a + 2c \\ -1 &= 2a + c \\ \hline 9 &= 3c \\ 3 &= c \end{aligned}$$

$$\begin{aligned} 1 &= 2a - 3 \\ 4 &= 2a \\ 2 &= a \end{aligned}$$

$$\begin{aligned} 6 &= 2 - b + 3 \\ 6 &= 5 - b \\ 1 &= -b \\ -1 &= b \end{aligned}$$

$$y = 2x^2 - x + 3$$