

pg. 171 #10 - #14 (even)

Complete together
as warm -up! :)

$$10. \begin{cases} x - y - 2z = 4 \\ -x + 2y + z = 1 \\ -x + y - 3z = 11 \end{cases}$$

$$\begin{array}{l} y - z = 5 \\ -5z = 15 \\ \hline -5 \quad -5 \\ z = -3 \checkmark \end{array} \quad \left. \begin{array}{l} y - (-3) = 5 \\ y + 3 = 5 \\ \hline -3 \quad -3 \\ y = 2 \checkmark \end{array} \right\} \begin{array}{l} x - y - 2z = 4 \\ x - 2 - 2(-3) = 4 \\ x - 2 + 6 = 4 \\ x + 4 = 4 \\ \hline -4 \quad -4 \\ x = 0 \checkmark \end{array}$$

$$\boxed{(0, 2, -3)}$$

x, y, z

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$$12. \begin{cases} a + b + c = -3 \\ * 3b - c = 4 \\ 2a - b - 2c = -5 \end{cases}$$

$$~~-2a - 2b - 2c = 6~~$$

$$\rightarrow \underline{2a - b - 2c = -5}$$

$$* -3b - 4c = 1$$

$$~~3b - c = 4~~$$

$$~~-3b - 4c = 1~~$$

$$\hline -5c = 5$$

$$\frac{-5}{-5} = \frac{5}{-5}$$

$$c = -1 \checkmark$$

$$3b - c = 4$$

$$3b - (-1) = 4$$

$$3b + 1 = 4$$

$$\frac{-1}{-1} \quad \frac{-1}{-1}$$

$$\hline \frac{3b}{3} = \frac{3}{3}$$

$$b = 1 \checkmark$$

$$a + b + c = -3$$

$$a + 1 + (-1) = -3$$

$$a = -3 \checkmark$$

$$\boxed{(-3, 1, -1)}$$

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14.
$$\begin{cases} x - y + 2z = -7 \\ y + z = 1 \\ x = 2y + 3z \end{cases}$$

$$(2y + 3z) - y + 2z = -7$$

$$\begin{aligned} -1(y + z = 1) \\ y + 5z = -7 \end{aligned}$$

$$\begin{aligned} -y - z = -1 \\ y + 5z = -7 \\ \hline 4z = -8 \\ \frac{4z}{4} = \frac{-8}{4} \\ z = -2 \end{aligned}$$

$$\begin{aligned} y + z = 1 \\ y + (-2) = 1 \\ \quad +2 \quad +2 \\ \hline y = 3 \end{aligned}$$

$$x = 2y + 3z$$

$$x = 2(3) + 3(-2)$$

$$x = 0$$

$$(0, 3, -2)$$