

Homework

2. $\begin{cases} \textcircled{1} x - y + 4z = -29 \\ \textcircled{2} 3x - 2y - z = -6 \\ \textcircled{3} 2x - 5y + 6z = -55 \end{cases}$

5. $\begin{cases} \textcircled{1} 2x - 3y + 5z = -5 \\ \textcircled{2} 2y - 3z = 4 \\ \textcircled{3} 4z = -8 \end{cases}$

Step 3: Eq 4 & 5 $(-2, 3, -6)$

$$\begin{array}{r} 3y - 39z = 243 \\ -3y - 2z = 3 \\ \hline -41z = 246 \\ \boxed{z = -6} \end{array}$$

Step 1: Eq 3 $(1, -1, -2)$

$$\begin{array}{r} 4z = -8 \\ \boxed{z = -2} \end{array}$$

Step 2: Eq 2

$$\begin{array}{r} 2y + 6 = 4 \\ 2y = -2 \\ \boxed{y = -1} \end{array}$$

Step 3: Eq 1

$$\begin{array}{r} 2x + 3 - 10 = -5 \\ 2x - 7 = -5 \\ 2x = 2 \\ \boxed{x = 1} \end{array}$$

Warm Up:

Using your calculator to substitute, determine the solution to the system of equations:

$$1 + 2(1) - 1 \neq 1$$

$$-1 + 2(1) - 1 \neq 1$$

$$x + 2y - z = 1 \quad 3 + 2(\cancel{0}) - (-2) \neq 1$$

$$x + 2y + 2z = 7 \quad 3 + 2(\cancel{0}) - 2 = 1$$

$$2x + 6y + z = 8 \quad 3 + 2(\cancel{0}) + 2(2) = 7$$

$$2(3) + 1(\cancel{0}) + 2 = 8 \checkmark$$

~~A) (1, 1, 2)~~

~~B) (-1, 1, 2)~~

~~C) (3, 0, -2)~~

D) (3, 0, 2)

Example #1:

Solve the following system of equations.

Step 1: Eq 1 + 3

$$\begin{array}{r} \textcircled{1} 2x - y + z = 0 \\ \textcircled{2} 3x - 2y + 4z = 11 \\ \textcircled{3} 5x + y - 6z = -32 \\ \hline \textcircled{4} 7x - 5z = -32 \end{array}$$

Step 2: Eq 1 + 2

$$\begin{array}{r} \textcircled{1} 2x - y + z = 0 \\ \textcircled{2} 3x - 2y + 4z = 11 \\ \hline \textcircled{5} -x + 2z = 11 \end{array}$$

Step 3: Eq 4 + 5

$$\begin{array}{r} 7x - 5z = -32 \\ + -7x + 14z = 77 \\ \hline 9z = 45 \\ \boxed{z = 5} \end{array}$$

Step 5:

$$\begin{array}{r} 2(-1) - y + 5 = 0 \\ -y + 3 = 0 \\ \boxed{3 = y} \end{array}$$

Step 4: Eq 5

$$\begin{array}{r} -x + 2(5) = 11 \\ -x + 10 = 11 \\ -x = 1 \\ \boxed{x = -1} \end{array}$$

$$\boxed{(-1, 3, 5)}$$

YOU TRY #2

Solve for all 3 variables:

$$x + y + z = 4$$

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

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

Homework

3. $2x - y + 3z = -14$
 $4x + 2y - z = 12$
 $6x - 3y + 4z = -22$

4. $x - 2y + z = -4$
 $2x + 4y - 3z = -1$
 $-3x - 6y + 7z = 4$