Solve this matrix equation.

$$\underset{A}{\begin{bmatrix} 22 & 48 \\ 78 & 2 \end{bmatrix}} = 4\underset{B}{\begin{bmatrix} 7 & 0 \\ 2 & -3 \end{bmatrix}} X - 2\underset{C}{\begin{bmatrix} 3 & 4 \\ -5 & 1 \end{bmatrix}}$$

$A = 4BX - 2C$

$+2C \qquad +2C$

$A + 2C = 4BX$

$X = (4B)^{-1}(A + 2C) = \begin{bmatrix} 1 & 2 \\ -5 & 1 \end{bmatrix}$

Solve this system of equations:

$y = -2.79x + 13.427$ You need to rewrite this into Standard Form.

$2.79x + y = 13.427$

$2.4x + 110y = 1078.075$

$\begin{bmatrix} 2.79 & 1 \\ 2.4 & 110 \end{bmatrix} X = \begin{bmatrix} 13.427 \\ 1078.075 \end{bmatrix}$

$A \quad X \quad = B$

$X = A^{-1}B$

$\begin{bmatrix} 1.31 \\ 9.772 \end{bmatrix}$

$(1.31, 9.772)$

Solve this system of equations:

$4x + 3z = -64$

$19y + 7z - x = -23$

$-4z - 8y = 40$

$X = A^{-1}(B)$

$X = \begin{bmatrix} 8 \\ 11 \\ -32 \end{bmatrix}$

$\underset{A}{\begin{bmatrix} 4 & 0 & 3 \\ -1 & 19 & 7 \\ 0 & -8 & -4 \end{bmatrix}} X = \underset{B}{\begin{bmatrix} -64 \\ -23 \\ 40 \end{bmatrix}}$

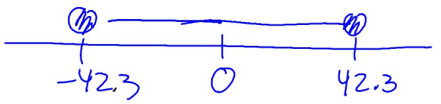
$(8, 11, -32)$

Solve.

This inequality tells me that the distance from zero is LESS than 42.3. In other words, you are closer than 42.3 from zero. Which means you are between -42.3 and 42.3

$|x + 13.7| \leq 42.3$

This leads to the following graph




This graph leads to the following inequality which you can solve

$-42.3 \leq x + 13.7 \leq 42.3$

$-13.7 \qquad -13.7 \qquad -13.7$

$-56 \leq x \leq 28.6$

Solve.

$|x + 27.6| \geq 84.9$

This inequality tells me that the distance from zero is MORE than 84.9. In other words, you are farther than 84.9 from zero

This leads to the following graph


This graph leads to the following inequality which you can solve

$x + 27.6 < -84.9$ OR $x + 27.6 > 84.9$

$-27.6 \quad -27.6 \qquad -27.6 \quad -27.6$

$x < 112.5$ or $x = 57.3$