3.) DETERMINE WHETHER b CAN BE WRITTEN AS A LINEAR COMBINATION OF a_1 & a_2.

(DETERMINE IF X_1 & X_2 EXIST, SUCH THAT $X_1a_1 + X_2a_2 = b$)

$a_1 = \begin{bmatrix} 2 \\ 3 \\ -3 \end{bmatrix}$ $a_2 = \begin{bmatrix} -5 \\ 1 \\ 2 \end{bmatrix}$ AND $b = \begin{bmatrix} 23 \\ 9 \\ -18 \end{bmatrix}$

$X_1 = 4$, $X_2 = -3$

$-b$ CAN BE WRITTEN AS A LINEAR COMBO

$$\begin{bmatrix} 2 & -5 & 23 \\ 3 & 1 & 9 \\ -3 & 2 & -18 \end{bmatrix}$$

$3X_1 + X_2 = 9$

$-3X_1 + 2X_2 = -18$

$0 + 3X_2 = -9$

$X_2 = -3$

$3X_1 - 3 = 9$

$3X_1 = 12$

$X_1 = 4$