Solve this system of equations.

This would probably be easiest using Elimination.

$$3(8x - 5y = -23) \longrightarrow 24x - 15y = -69$$

$$-43y = -729$$

$$-73y = -73y = -729$$

$$-73y = -73y = -73y$$

When using matrices to solve a system of equations both equations must be in Standard Form.

When you solve you will always do this:

$$\begin{bmatrix} X \\ Y \end{bmatrix} = A^{-1} \cdot B$$

Turning a system of equations into a matrix equation: $A \cdot X = B$

$$8x - 5y = -23$$

$$6x + 7y = 15$$

В

Matrix A is called the Coefficient Matrix:

• Matrix X is called the Variable Matrix:

Matrix B is called the Constant (or Answer) Matrix:

Solve this by doing:
$$X = A^{-1} \cdot B = \begin{bmatrix} -1 \\ 3 \end{bmatrix}$$

as an ordered pair the answer is: (-1, 3)

Use matrices to solve this system of equations:

$$11a - 15b = -145$$

$$11a - 15b = -145$$

 $^{\circ}$ 8a + 13b = 38 Write this system as a matrix equation: $\begin{bmatrix} 11 & -15 \\ 8 & 13 \end{bmatrix} \chi = \begin{bmatrix} -145 \\ 38 \end{bmatrix}$ A X = B

$$X = A^{-1}B = \begin{bmatrix} -5 \\ 6 \end{bmatrix}$$

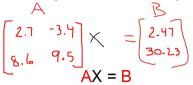
as an ordered pair the answer is: (-5, 6)

Use matrices to solve this system of equations:

$$2.7x - 3.4y = 2.47$$

 $8.6x + 9.5y = 30.23$

Turn this system into a matrix equation:



Solve this by doing: $X = A^{-1} \cdot B = \begin{bmatrix} 2.3 \\ 1.1 \end{bmatrix}$

as an ordered pair the answer is: (2.3, 1.1)

Use matrices to solve this system of equations:

$$y = 4x - 8 \rightarrow -4x + 4y = -8$$

 $6x + 7y = -5$

Turn this system into a matrix equation:

$$\begin{array}{ccc}
A & & \\
-4 & & \\
6 & &
\end{array}$$

$$AX = B$$

Solve this by doing: $X = A^{-1} \cdot B = \begin{bmatrix} 1.5 \\ -2 \end{bmatrix}$

as an ordered pair the answer is: (1.5, -2)

Solve.
$$\frac{2}{3}x - \frac{5}{6}y = 31$$

 $\frac{7}{4}x + \frac{1}{9}y = 40$

Turn this system into a matrix equation:

$$\begin{bmatrix} \frac{2}{3} & -\frac{5}{6} \\ \frac{7}{4} & \frac{1}{9} \end{bmatrix} \times = \begin{bmatrix} 31 \\ 40 \end{bmatrix}$$

$$AX = B$$

Solve this by doing:

$$X = A^{-1} \cdot B = \begin{pmatrix} 24 \\ -78 \end{pmatrix}$$

as an ordered pair the answer is: (24, -18)

Solve this system of equations. Give answer as an ordered triple.

Turn this system into a matrix equation:

$$4x - y + 3z = -5$$

 $-3x + 5y + z = 10$
 $6x - 7y - 8z = 1$

$$A = B$$

$$A = B$$

Solve this by doing:
$$X = A^{-1} \cdot B = \begin{cases} 3 \\ -7 \end{cases}$$

as an ordered triple the answer is: (1, 3, -2)