A $\begin{bmatrix} 5 & 6 & -1 \\ 0 & -4 & 8 \end{bmatrix}$ B $\begin{bmatrix} -9 & -1 & 2 \\ 7 & 3 & 0 \end{bmatrix}$ C $\begin{bmatrix} 4 & -3 \\ 2 & 10 \\ -6 & 5 \end{bmatrix}$

Which two matrices can be:

1. Added A and B: eith A+E or B+A
2. Subtracted A and B: eith A-E or B-A
3. Multiplied A and C or B and C
4. Divided You can't divide matric

To Add and Subtract two matrices they must have the exact same dimensions.

To multiply two matrices
the second matrix must have the same number of rows as the number of columns in the first matrix Their middle numbers must match:

A*C = 3 x 2 * 2 x 3 or C*B = 2 x 3 * 3 x 2

the dimensions of the answer are the first and last numbers of the two matrices being multiplied.

The dimensions of the answer matrix when two matric

C*B = 3 x 2 * 2 x 3 = 3 x 3

Solving a Matrix Equation

$$A\begin{bmatrix} X \\ Y \end{bmatrix} = B$$

Matrix Equation

$$A\begin{bmatrix} X \\ Y \end{bmatrix} = B$$

To solve for $\begin{bmatrix} X \\ Y \end{bmatrix}$

you would normally

divide by matrix A.

But instead, we multiply by the inverse of matrix A.

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

Solving a system of equations using matrices.

3.

$9C + 12D = 21$

$10C + 4D = -14$

Coefficient Matrix - A

2x2 matrix using the coefficients of the equations with the varia the same or

A $\begin{bmatrix} 9 & 1 \\ 10 & \end{bmatrix}$

Constant Matrix - B
(Answer Matrix)

2x1 matrix using the two "ar

B $\begin{bmatrix} 21 \\ -14 \end{bmatrix}$

To find the answer enter these matrices on the graph and perform the follo

$A^{-1}B$ this will give $\begin{bmatrix} -3 \\ 4 \end{bmatrix}$ this represe the ordere pair: (-3

which mea C= -3 and D

2.

$3c - 7d = -31$

$4c + 7d = -25$

A $\begin{bmatrix} 3 & -7 \\ 4 & 7 \end{bmatrix}$ B $\begin{bmatrix} -31 \\ -25 \end{bmatrix}$ $[A]^{-1}[B] \Rightarrow (-8, 1)$

3.

Both equations must be in Stand

$y = x - 9 \rightarrow -x + y = -9$

$2x - 3y = 20$

A $\begin{bmatrix} -1 & 1 \\ 2 & -3 \end{bmatrix}$ B $\begin{bmatrix} -9 \\ 20 \end{bmatrix}$

$A^{-1}B = (7, -2)$

Solve

$$\frac{2}{3}x - \frac{5}{6}y = 31$$
$$\frac{7}{4}x + \frac{1}{9}y = 40$$

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

A B

$[A]^{-1}[B] \Rightarrow (24, -18)$

Solve this system of equ

4x - 10v =

6x - 15v =

when you try to solve this system of equations usin
get the following error mes: ERR:SINGULAR

This means that you can't solve this system of equatio
due to the fact it represents either two parallel lin
to lines that are actually the same (Many Sol). To c
answer is correct you need to change these equa
intercept form to find the slopes and y-intercepts in or
if they are parallel or the sa