Which variable would you try to eliminate?
What steps would you take to eliminate that variable?

1.

$4A + 9B = 37$

$7A + 9B = 31$

Eliminate B
Subract equations

2.

$6P + 8Q = 54$

$-6P + 7Q = 36$

Eliminate P
Add equations

3.

$9C + 12D = 21$

$10C + 4D = -14$

To eliminate C:

Mult top equation by 10
Mult bottom eq by 9
Then subtract

To eliminate D:

Mult bottom eq by 3
Then subtract

4.

$6M - 7N = 86$

$4M + 3N = -4$

To eliminate M:

Mult top eq by 2
Mult bottom eq by 3
Then subtract

To eliminate N:

Mult top eq by 3
Mult bottom eq by 7
Then add

You can now finish Hwk #12. Sec 3-2

Pages 128-129

Problems 8, 14, 44 - 48

Solving a system of Linear Equations using matrices.

Matrix: Rows and Columns of data

$$\begin{bmatrix} 5 & 6 & -1 \\ 0 & -4 & 8 \end{bmatrix}$$

Dimensions of a Matrix:

the matrix at the left has the following dimensions:

2 x 3 "two by three"

Each number in a matrix is called an element

Matrices are named using a capital letter

Entering matrices on a calculator:

$$\begin{bmatrix} 5 & 6 & -1 \\ 0 & -4 & 8 \end{bmatrix}$$

1. press 2ND then X^{-1}
2. Arrow key to EDIT and press ENTER
3. Enter the dimensions you want (Rows x Columns)
4. Enter the data.

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

Enter Matrices B and C on the calculator.

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: either A+B or B+A
2. Subtracted A and B: either A-B or B-A
3. Multiplied A and C or B and C
4. Divided You can't divide matrices!