HW6.Problem 3 These problems can be quite simple if you get the hang of it. Let's walk through a quick example.

Lets say we have imaginary problem (d) that gives us

[[20,4,-6,106],[0,0,2,4026]] \* [x1,x2,x3,x4] = [2,6]

Find the solution.

Here's how I tackled these:

Transform these into equations giving:

(1) 20x1 + 4x2 - 6x3 + 106x4 = 2

(2) 0x1 + 0x2 + 2x3 + 4026x4 = 6

Now we have more variables than equations, no big deal.

Remember **"Any column not containing the leftmost non zero entry of some row is discarded"**

We have 4 columns and 2 rows, so we know that we're getting rid of 2 columns (since we have 2 rows, we can only have 2 columns that contain the leftmost non zero entry of a row).

20 is the first non zero element of row 1, so we keep the column [10,0]

2 is the first non zero element of row 2, so we keep the column [-6,2]

We throw out column [4,0] & [106,4026] which conveniently eliminates x2 and x4 (we are making those 0).

Now our equations look like

(1) 20x1 - 6x3 = 2

(2) 0x1 + 2x3 = 6

Solve for x1 -> lets call this answer ax

Solve for x2 -> lets call this answer bx

Then your final answer is [ax,0,bx,0]