

1. Write out the ingredients requirement for 16 oz FroYos if the ingredient requirements for 8 oz FroYos are as follows:

	Vanilla	Tart	Mango	Surprise
White stuff	7 OZ	6 OZ	5 OZ	4 OZ
Clear stuff	1 OZ	1 OZ	1 OZ	1 OZ
Yellow stuff	0 OZ	1 OZ	0 OZ	2 OZ
Orange stuff	0 OZ	0 OZ	2 OZ	1 OZ

2. Here are inventory and delivery tables for a sock store. Write down a sample “Sales” table, and then write down the Inventory table that takes into account the recent deliveries and sales.

Inventory	Argyle	Tie-Dye	Fish-net	Toe-socks	Delivery	Argyle	Tie-Dye	Fish-net	Toe-socks
Lexington	20	20	5	20	Lexington	2	2	1	2
Frankfort	10	20	10	20	Frankfort	1	2	1	2
Cincinnati	20	20	20	20	Cincinnati	2	2	2	2

3. How large is the following matrix: $\left[\begin{array}{ccc|c} X & Y & Z & RHS \\ 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \end{array} \right]$

How many equations does it represent?

In how many variables?

4. If you double a 4×4 ingredients matrix, how big is it?

If you add two 4×4 inventory matrices, how big is the result?

5. The FroYo place has three machines. How much white stuff does the front machine use?

Ingredients	Vanilla	Tart	Mango	Surprise	Orders	Front	Middle	Back
White stuff	7 OZ	6 OZ	5 OZ	4 OZ	Vanilla	4	6	3
Clear stuff	1 OZ	1 OZ	1 OZ	1 OZ	Tart	2	1	1
Yellow stuff	0 OZ	1 OZ	0 OZ	2 OZ	Mango	2	1	3
Orange stuff	0 OZ	0 OZ	2 OZ	1 OZ	Surprise	1	2	4

1'. Now repeat doubling the matrix of #1:

$$2 \cdot \begin{bmatrix} 7 & 6 & 5 & 4 \\ 1 & 1 & 1 & 1 \\ 0 & 1 & 0 & 2 \\ 0 & 0 & 2 & 1 \end{bmatrix} =$$

2'. Now repeat adding the matrices of #2:

$$\begin{bmatrix} 20 & 20 & 5 & 20 \\ 10 & 20 & 10 & 20 \\ 20 & 20 & 20 & 20 \end{bmatrix} + \begin{bmatrix} 2 & 2 & 1 & 2 \\ 1 & 2 & 1 & 2 \\ 2 & 2 & 2 & 2 \end{bmatrix} =$$

5' Now finish multiplying matrices from #5: (Label the rows and columns if it helps)

$$\begin{bmatrix} 7 & 6 & 5 & 4 \\ 1 & 1 & 1 & 1 \\ 0 & 1 & 0 & 2 \\ 0 & 0 & 2 & 1 \end{bmatrix} \cdot \begin{bmatrix} 4 & 6 & 3 \\ 2 & 1 & 1 \\ 2 & 1 & 3 \\ 1 & 2 & 4 \end{bmatrix} =$$