

Handout 4 : Math with Matrices/Making Matrices and Checking Them Twice

1. What must be true of two matrices for them to be able to be added or subtracted?
2. Add $\begin{bmatrix} 2 & 4 & -5 \\ -1 & -6 & 3 \\ 0 & 1 & -2 \end{bmatrix} + \begin{bmatrix} 3 & 5 & -1 \\ -2 & -4 & 3 \\ 1 & 3 & -2 \end{bmatrix}$
or explain why you cannot.
3. Add $\begin{bmatrix} 5 & 9 & -6 \\ -3 & -10 & 6 \\ 1 & 4 & -4 \end{bmatrix} + \begin{bmatrix} 2 & 0 & -3 \\ 1 & 5 & 1 \end{bmatrix}$ or
explain why you cannot.
4. Add $\begin{bmatrix} 2 & 8 \\ 5 & 3 \end{bmatrix} + \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$ or explain why you
cannot.
5. Subtract $\begin{bmatrix} 5 & 9 & -6 \\ -3 & -10 & 6 \end{bmatrix} - \begin{bmatrix} 2 & 0 & -3 \\ 1 & 5 & 1 \end{bmatrix}$
or explain why you cannot.
6. Subtract $\begin{bmatrix} 3 & 9 & -3 \\ -4 & -15 & 5 \end{bmatrix} - \begin{bmatrix} 2 & 0 \\ -1 & 7 \\ 5 & 3 \end{bmatrix}$
or explain why you cannot.
7. Subtract $\begin{bmatrix} 2 & 8 \\ 5 & 3 \end{bmatrix} + \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$ or explain
why you cannot.
8. Create a matrix for this data if it is appropriate; if it is not, explain: We keep a list of times when we walk our dog. Each day we list the morning time and the evening time. We have three days of data:
Mon: morning-7:01am evening-6:32pm
Tues: morning-6:59am evening-6:40pm
Wed: morning-7:03am evening-6:58pm
9. Create a matrix for this data if it is appropriate; if it is not, explain: This week my lemonade stand is selling yellow lemonade at 5 cents a cup, pink lemonade at 6 cents a cup, and blue lemonade at 7 cents a cup. Last week we sold pink lemonade at 5 cents a cup, orange lemonade at 4 cents a cup, and yellow lemonade at 7 cents a cup. I'd like to compare the data from the two weeks.
10. Create a matrix for this data if it is appropriate; if it is not, explain: I have 3 blue shirts, 4 red shirts, 5 pink shirts, 6 green shirts and no yellow shirts.