

Concept – Adding and Subtracting Matrices

Matrix addition and subtraction can only be done when we have matrices _____

To perform matrix addition _____

For example:





$$\begin{bmatrix} 2 & 4 \\ 5 & 1 \end{bmatrix} + \begin{bmatrix} 9 & 8 \\ 9 & -1 \end{bmatrix}$$

To perform matrix subtraction _____

For example:

$$\begin{bmatrix} 7 & 3 & 2 \\ 8 & 1 & 0 \end{bmatrix} - \begin{bmatrix} 4 & 2 & 7 \\ 9 & -1 & 3 \end{bmatrix}$$

How to – Add or subtract matrices with CAS

1. On a  page press  to open the templates.
2. Choose the big matrix template  then type in the number of rows and the number of columns. To quickly type it in press  between each element.
3. Make sure the addition or subtraction sign is between the matrices, outside of the square brackets.
4. To save the matrix so you don't have to type it in every time press _____ → _____ and choose a letter to represent the matrix.

Examples:

Mr Hyslop keeps careful records of the size of his prize winning bunnies. Below is some of the measurements he collected in July and August is shown in the table below.

	July				August			
Bunny	A	B	C	D	A	B	C	D
Length (cm)	62	45	51	57	62	47	51	56
Weight (kg)	0.8	1.1	0.9	1.3	1.3	1.0	0.9	1.1

- a. In the space below construct a matrix for the length and weight of bunnies in July labelled J and the length and weight of bunnies in August labelled A.

b. Matrix D is found using $D=A-J$. Calculate matrix D.

c. What is element d_{23} and what information does this represent?

d. Element d_{14} is negative. What does this mean?

Worked Examples

Select two matrices. Show that they can be added or subtracted then perform one operation clearly showing how each element is calculated.