

## Worksheet: Basics of Matrices

This worksheet has questions about the size of matrices, adding and subtracting matrices and multiplying matrices by scalars.

Model answers to  
this sheet



Basics of Matrices  
study guide



1. Given the matrices;

$$A = \begin{bmatrix} 4 & 1 \\ -1 & 2 \end{bmatrix}, \quad B = [5 \quad -2], \quad C = \begin{bmatrix} 3 \\ -1 \end{bmatrix}, \quad D = \begin{bmatrix} 6 & 0 \\ 0 & 1 \end{bmatrix}, \quad E = \begin{bmatrix} 4 & 3 & 7 \\ -1 & 3 & -2 \end{bmatrix}, \quad F = \begin{bmatrix} -2 \\ 5 \end{bmatrix}$$

- What is the size (dimension) of these matrices.
- State which pairs of the matrices can be added together.
- Calculate:

- |                 |                       |                |
|-----------------|-----------------------|----------------|
| (i) $3A$        | (ii) $\frac{1}{2}B$   | (iii) $-2C$    |
| (iv) $12A + 4D$ | (v) $5\pi C - 2\pi F$ | (vi) $xD - yA$ |

2. If:

$$A = \begin{bmatrix} 1 & 2 & 0 \\ a & b & c \end{bmatrix}, \quad B = \begin{bmatrix} a & b & c \\ 1 & 2 & 0 \end{bmatrix}, \quad C = \begin{bmatrix} c & 5 & c \\ c & c & c \end{bmatrix}$$

Given that  $A + B = C$ , find the constants  $a$ ,  $b$  and  $c$ .



This worksheet is one of a series on  
mathematics produced by the  
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