

# Practice and Revision - Matrices

Chapter 9: Matrices · Topic 2

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## Key Concept

Matrix addition and subtraction require matrices of the same dimensions, adding or subtracting corresponding elements.

Matrix multiplication is more complex, requiring the number of columns in the first matrix to equal the number of rows in the second.

A matrix's order is expressed as rows  $\times$  columns, like a  $2 \times 3$  matrix having 2 rows and 3 columns.

Matrices are used to organise and solve systems of equations efficiently, and have applications in computer graphics, science, and engineering.

## Quick Revision Notes

- A matrix is a rectangular arrangement of numbers.
- Addition/subtraction needs same-dimension matrices.
- We add/subtract corresponding elements.
- Multiplication needs columns of first = rows of second.
- Matrix order is rows  $\times$  columns.
- A  $2 \times 3$  matrix has 2 rows, 3 columns.
- Matrices organise and solve equation systems.
- They're used in graphics, science, engineering.

## Practice Questions

- 1 Add two  $2 \times 2$  matrices.
- 2 Subtract two  $2 \times 2$  matrices.
- 3 Determine if two matrices can be multiplied based on their order.
- 4 Discuss the order of a given matrix.
- 5 Research a real-life use of matrices.
- 6 Explain matrix operations in your own words.