Matrices and simultaneous equations

Learn and practise | Free preview

A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the worked example, then show each step in the practice questions. Show the mathematical steps. A calculator, graphing tool or CAS may be used to check results where useful.

What you will practise

• Matrices

Useful starting skills: Year 10 algebra, percentages, statistical displays, geometry and trigonometry.

A matrix stores a rectangular array of values. Addition needs equal dimensions; AB is defined when the columns of A equal the rows of B.

For a 2×2 matrix [[a, b], [c, d]], determinant ad-bc must be nonzero for an inverse. Products generally depend on order.

Worked example

A=[[1, 2], [3, 4]], v=[[2], [1]]. Find Av.

First entry 1×2+2×1=4

second 3×2+4×1=10.

Answer: [[4], [10]].

Try it yourself

Name: _____ Date: _____

1. State dimensions of [[2, 3, 4], [5, 6, 7]].

2. Find [[1, 3], [2, 4]]+2[[2, 0], [1, -1]].

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. 2×3.

Count 2 rows and 3 columns.

2. [[5, 3], [4, 2]].

Multiply each entry of the second matrix by 2, then add corresponding entries.

Curriculum reference: General Mathematics Units 1–2 — Matrices

Independent original resource. Not published or endorsed by VCAA. This focused set supports the listed skills; it is not a complete course or an official assessment.

This free preview may be shared intact with attribution. Not for sale.