Cartesian Form of Equation of a Straight Line

Examples

1. Find the Cartesian equation of the line with equation .
2. Find the Cartesian equation of the line with equation .
3. The Cartesian equation of a line is . Find the vector form of the equation of the line.
4. The Cartesian equation of a line is . Find the vector form of the equation of the line.

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The Equation of a Plane

The equation of a plane can be written in vector form.

Let the point R, with position vector be an arbitrary point on the plane ∏.

Suppose ∏ passes through the point A, with position vector **a**.

Let **b** and **c** be non-parallel vectors in the plane.

The position of the general point R can be found by

**This is one of several ways of writing the equation of a plane.**

Example

A plane passes through the points

Find the equation of the plane in the form

Example

Verify that the point with position vector lies in the plane with vector equation

Test Your Understanding