A Level · Edexcel · Further Maths

6 mins 1 question

6.1 Vector Lines

6.1.1 Equations of Lines in 3D / 6.1.2 Pairs of Lines in 3D / 6.1.3 Angle between Lines / 6.1.4 Shortest Distances - Lines

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Total Marks /6

1 (a) The line l_1 has equation

$$\frac{x-1}{2} = \frac{y+1}{-1} = \frac{z-4}{3}$$

The line l_2 has equation

$$\mathbf{r} = \mathbf{i} + 3\mathbf{k} + t(\mathbf{i} - \mathbf{j} + 2\mathbf{k})$$

where t is a scalar parameter.

a) Show that l_1 and l_2 lie in the same plane.

(3 marks)

(b) (b) Find, to the nearest degree, the acute angle between l_1 and l_2

(3 marks)