

16. (i) Two non-zero vectors, \mathbf{a} and \mathbf{b} , are such that

$$|\mathbf{a} + \mathbf{b}| = |\mathbf{a}| + |\mathbf{b}|$$

Explain, geometrically, the significance of this statement.

(1)

(ii) Two different vectors, \mathbf{m} and \mathbf{n} , are such that $|\mathbf{m}| = 3$ and $|\mathbf{m} - \mathbf{n}| = 6$
The angle between vector \mathbf{m} and vector \mathbf{n} is 30°

Find the angle between vector \mathbf{m} and vector $\mathbf{m} - \mathbf{n}$, giving your answer, in degrees, to one decimal place.

(4)