VECTORS

1 12th Maths - EXERCISE-10.3

1. Find the angle between two vectors $\vec{a}$ and $\vec{b}$ with magnitudes $\sqrt{3}$ and 2 respectively having $\vec{a}.\vec{b} = \sqrt{6}$.

2 SOLUTION

Given points are

$$\|a\| = \sqrt{3} \qquad (1)$$

$$\|b\| = 2 \qquad (2)$$

$$\vec{a}.\vec{b} = \sqrt{6} \qquad (3)$$

$$\vec{a}.\vec{b} = \|a\| \, \|b\| \, cos\theta \qquad (4)$$

$$\sqrt{6} = \sqrt{3} \times 2 \times cos\theta \qquad (5)$$

$$cos\theta = \frac{\sqrt{6}}{\sqrt{3} \times 2} \qquad (6)$$

$$= \frac{1}{\sqrt{2}} \qquad (7)$$

$$\theta = 45° \qquad (8)$$