1.2.29

AI25BTECH11021 - Abhiram Reddy N

Question:
The angles between two vectors a and b with magnitude $\sqrt{3}$ and 4, respectively, and a, b= 2 $\sqrt{3}$ is

Angle Between Two Vectors

Given:

$$|\mathbf{a}| = \sqrt{3}, \quad |\mathbf{b}| = 4, \quad \mathbf{a} \cdot \mathbf{b} = 2\sqrt{3}$$

Formula for angle between two vectors:

$$\mathbf{a} \cdot \mathbf{b} = |\mathbf{a}||\mathbf{b}| \cos\theta$$

Substitute values:

$$2\sqrt{3} = \sqrt{3} \cdot 4 \cdot \cos\theta = 4\sqrt{3}\cos\theta$$

$$\cos\theta = \frac{2\sqrt{3}}{4\sqrt{3}} = \frac{1}{2}$$

$$\theta = \cos^{-1}\left(\frac{1}{2}\right) = \boxed{60^\circ}$$

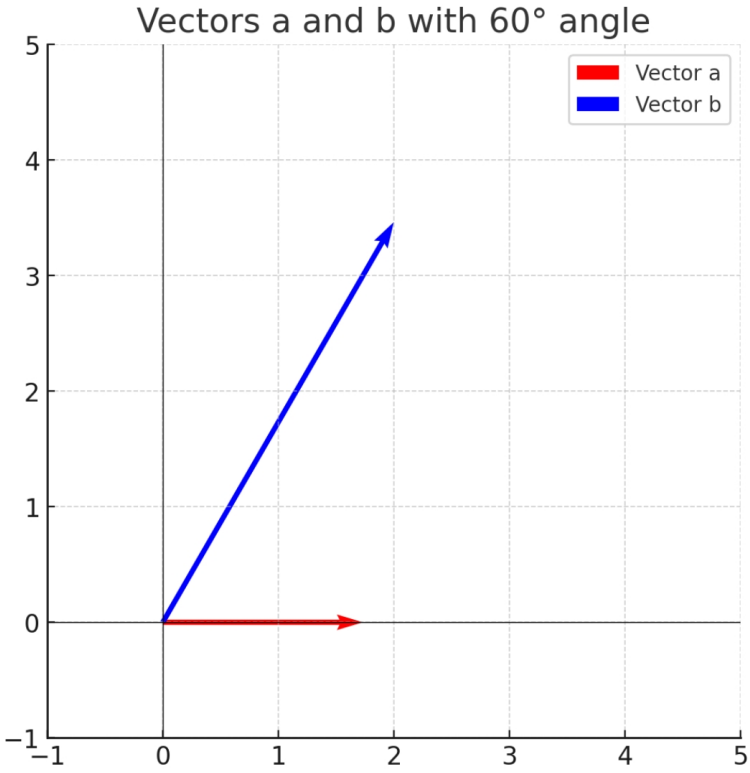

Fig. 0.1: plot **R** obtained as **W** – **V**