

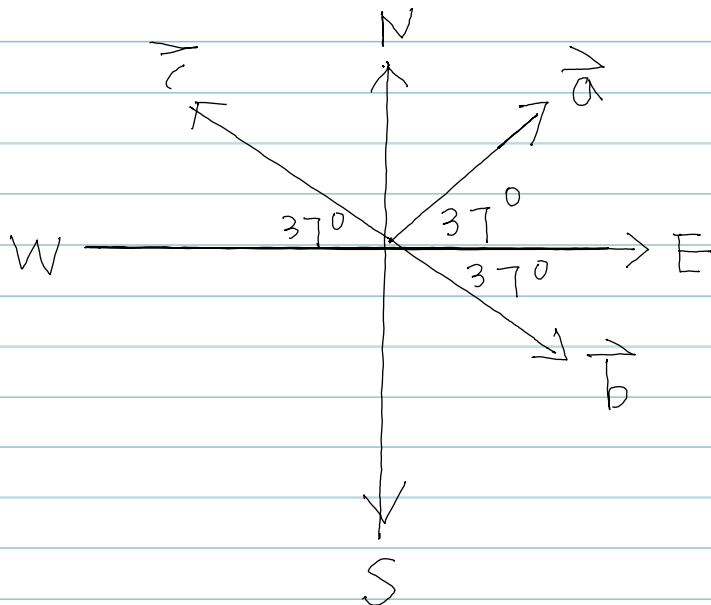
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設 $|\vec{a}| = 100\text{ m}$ 方向為東偏北 37°

$|\vec{b}| = 100\text{ m}$ 方向為東偏南 37°

$|\vec{c}| = 100\text{ m}$ 方向為西偏北 37°

求 $\vec{a} + \vec{b} - \vec{c}$



$$\begin{aligned}\vec{a} &= 100 \times \cos 37^\circ \vec{i} + 100 \times \sin 37^\circ \vec{j} \\ &= 80(\text{m}) \vec{i} + 60(\text{m}) \vec{j}\end{aligned}$$

$$\begin{aligned}\vec{b} &= 100 \times \cos 37^\circ \vec{i} - 100 \times \sin 37^\circ \vec{j} \\ &= 80(\text{m}) \vec{i} - 60(\text{m}) \vec{j}\end{aligned}$$

$$\begin{aligned}\vec{c} &= -100 \times \cos 37^\circ \vec{i} + 100 \times \sin 37^\circ \vec{j} \\ &= -80(\text{m}) \vec{i} + 60(\text{m}) \vec{j}\end{aligned}$$

$$\vec{a} + \vec{b} - \vec{c} = 240(\text{m}) \vec{i} - 60(\text{m}) \vec{j}$$

$$|\vec{a} + \vec{b} - \vec{c}| = \sqrt{(240)^2 + (60)^2} = 247.4(\text{m})$$

$$\theta = \tan^{-1} \frac{60}{240} = 14^\circ \quad (\text{東偏南})$$