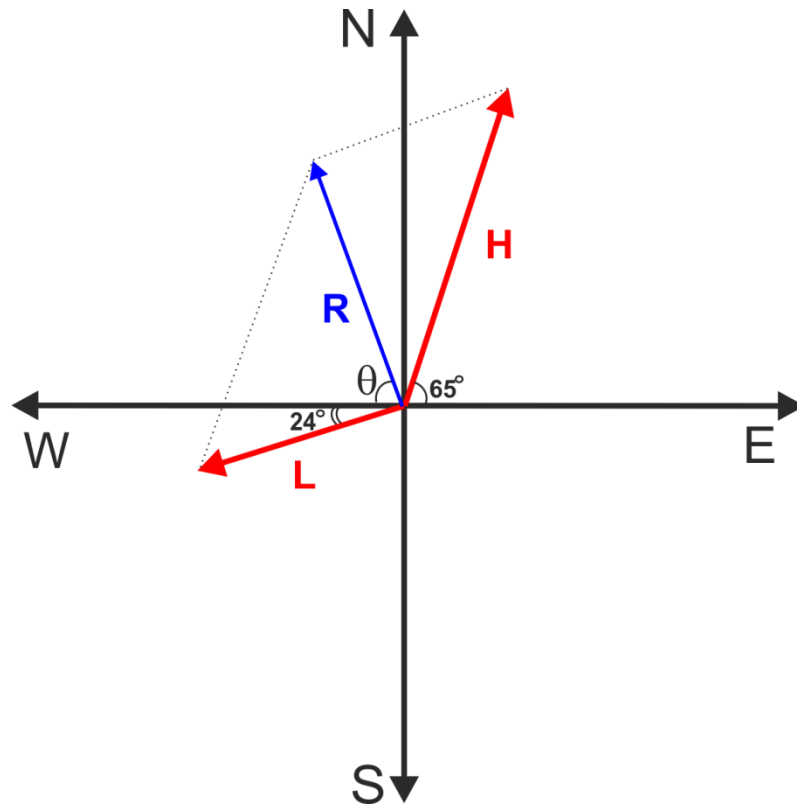


Answer on Question #84667 Physics / Other

Vector $L=10\text{m}$, 24° south of west. Vector $H=20\text{m}$, 65° north of east. Find $L + H = R$. Find theta.

Solution:



$$R_x = L_x + H_x = -10 \cos 24^\circ + 20 \cos 65^\circ = -0.683$$

$$R_y = L_y + H_y = -10 \sin 24^\circ + 20 \sin 65^\circ = 14.06$$

$$R = \sqrt{R_x^2 + R_y^2} = \sqrt{(-0.683)^2 + 14.06^2} = 14.1 \text{ m}$$

$$\tan \theta = \frac{14.06}{0.683} = 20.6, \quad \theta = 87.2^\circ \text{ north of west}$$

Answer: 14.1 m, 87.2° north of west

Answer provided by <https://www.AssignmentExpert.com>