Exercício

$a_x = a \cos 0° = 6\,\hat{i}$

$a_y = a \operatorname{sen} 0° = 0\,\hat{j}$

$b_x = b \cos 60° = 9 \times \frac{1}{2} = 4{,}5\,\hat{i}$

$b_y = b \operatorname{sen} 60° = 9 \times \frac{\sqrt{3}}{2} = 7{,}8\,\hat{j}$

$c_x = a_x + b_x = 6 + 4{,}5 = 10{,}5\,\hat{i}$

$c_y = a_x + b_y = 0 + 7{,}8 = 7{,}8\,\hat{j}$

R: $C = 10{,}5\,\hat{i} + 7{,}8\,\hat{j}$

$\tan \theta = \frac{c_y}{c_x} = \frac{7{,}8}{10{,}5}$

↓

R: $\theta = \arctan\left(\frac{7{,}8}{10{,}5}\right) \simeq 36{,}6°$

Exemplo 7.2

(A) $\vec{A} = 2\hat{i} + 3\hat{j}$ $\quad \vec{B} = -\hat{i} + 2\hat{j}$

$\vec{A} \cdot \vec{B} = A_x B_x + A_y B_y = 2 \times (-1) + (3 \times 2) = 3$

(B) $\vec{S} = \vec{A} + \vec{B}$

$S_x = A_x + B_x = 2 + (-1) = 1\,\hat{i}$

$S_y = A_y + B_y = 3 + 2 = 5\,\hat{j}$

$\tan \theta = \frac{S_y}{S_x} = \frac{5}{1}$

↓

R: $\theta = \arctan(5) \simeq 78{,}7°$

arc