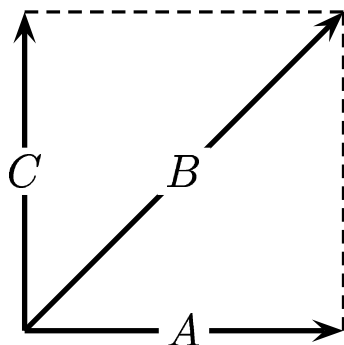


Given: $A = \hat{i}$, $B = \hat{i} + \hat{j}$, $C = \hat{j}$. Define: $D = A + B + C$



Determine the magnitude D , and the polar angle θ_D .

- A) $D = 2$, $\theta_D = 45^\circ$
- B) $D = 2\sqrt{2}$, $\theta_D = 45^\circ$
- C) $D = 2$, $\theta_D > 45^\circ$
- D) $D = 2\sqrt{2}$, $\theta_D > 45^\circ$

$$D = 2\hat{i} + 2\hat{j} . \text{ So } D = \sqrt{2^2 + 2^2} = 2\sqrt{2} .$$

$$\tan \theta_D = \frac{D_y}{D_x} = \frac{2}{2} = 1 , \text{ or } \theta = 45^\circ .$$

Answer **B**.