

Question Q1.26

If $\vec{\mathbf{A}} = \mathbf{0}$ for a vector in the xy -plane, does it follow that $A_x = -A_y$? What *can* you say about A_x and A_y ?

Solution

No, because if $\mathbf{A} = \mathbf{0}$, then

$$|\mathbf{A}| = \sqrt{A_x^2 + A_y^2} = 0.$$

Square both sides.

$$A_x^2 + A_y^2 = 0$$

Therefore,

$$A_x^2 = -A_y^2.$$