

Question 19

If one of the two components of a vector is not zero, can the magnitude of the other vector component of this vector be zero?

Solution

Suppose that one of the two components of the vector $\vec{\mathbf{A}} = \langle A_x, A_y \rangle$ is not zero.

$$\vec{\mathbf{A}} = \langle A_x, 0 \rangle$$

The question is basically asking if the remaining nonzero component can also be zero, and the answer is yes.

$$\vec{\mathbf{A}} = \langle 0, 0 \rangle$$

This is the zero vector.