Norm Criteria

1分

For a vector

$$\vec{x} := \begin{bmatrix} x \\ y \\ z \end{bmatrix}, \qquad \text{is} \qquad \|\vec{x}\| = x^2 + y^2 \qquad \text{a norm?}$$

选项*

○ Yes.

○ No, because it does not satisfy $\|\vec{x}\| = 0 \Leftrightarrow \vec{x} = 0$

○ No, because it does not satisfy $\|\alpha\vec{x}\| = |\alpha|\|\vec{x}\|$.

○ No, because it does not satisfy $\|\vec{x}\| \geq 0$

○ No, because it does not satisfy $\|\vec{x} + \vec{y}\| \leq \|\vec{x}\| + \|\vec{y}\|$.

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