

Algebra › Vector Algebra ›

## Normalized Vector

The normalized vector of  $\mathbf{X}$  is a vector in the same direction but with norm (length) 1. It is denoted  $\hat{\mathbf{X}}$  and given by

$$\hat{\mathbf{X}} \equiv \frac{\mathbf{X}}{|\mathbf{X}|},$$

where  $|\mathbf{X}|$  is the norm of  $\mathbf{X}$ . It is also called a unit vector.

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Unit Vector

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=  $\{\{2,-1,1\},\{0,-2,1\},\{1,-2,0\}\} \cdot \{x,y,z\}$ = continued fraction  $\tan x$ [CITE THIS AS:](#)

Weisstein, Eric W. "Normalized Vector." From *MathWorld*--A Wolfram Web Resource.  
<https://mathworld.wolfram.com/NormalizedVector.html>

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