7.5: Magnitude of a Vector

Alex L.

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Def: The **magnitude** of an n-dimensional vector is denoted $|a| = \sqrt{a_1^2 + a_2^2 + a_3^2 + a_4^2 + ... + a_n^2}$, and represents the length of the vector.

Def: A vector whose magnitude equals unity (1) is called a **unit vector**. A unit vector is denoted with a hat: $\hat{a}$, and is also called a normalized vector. To normalize a vector, divide it by its magnitude: $\frac{\vec{a}}{|a|}$.