



**Why**

A  $n$ -dimensional generalization of an ellipse.<sup>1</sup>

**Definition**

An *ellipsoid* (or *hyperellipse* or *hyperellipsoid*) is a set  $E \subset \mathbf{R}^n$  for which there exists  $A \in \mathbf{R}^{n \times n}$  positive definite satisfying

$$E = \{x \mid x^\top A x \leq 1\}.$$

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<sup>1</sup>Future editions will expand.



