



## Why

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## Definition

Let  $A \in \mathbf{R}^{d \times d}$ . The determinant of  $A$  is

$$\sum_{\sigma \in S_n} \left( \text{sgn}(\sigma) \prod_{i=1}^n a_{i, \sigma_i} \right)$$

We denote the determinant of  $A$  by  $\det A$ .

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<sup>1</sup>Future editions will include, and will probably take the genetic approach via volumes in three-dimensional space.



