



## TRIANGLE EQUALITY

### Why

The squared norm of a sum of orthogonal vectors is the sum of their squared norms.

### Result

**Prop. 1.** *Let  $(V, F)$  be an inner product space with induced norm  $\|\cdot\|$ . Let  $x, y \in V$  be orthogonal vector. Then*

$$\|x + y\|^2 = \|x\|^2 + \|y\|^2.$$

