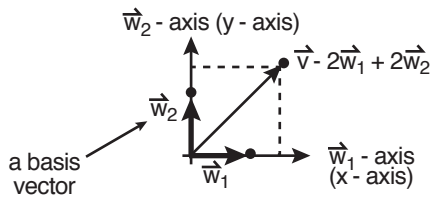


Normalizable functions and vectors behave analogously:

**Ordinary vector space:**

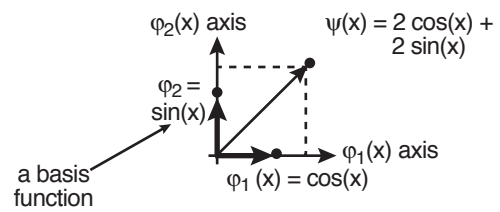


vectors point to (x,y) coords.

For vectors, normalization is done by the “dot product”:

$$\mathbf{a}^t \cdot \mathbf{b} = c$$

**Hilbert space:**



vectors point to functions

For functions, normalization is done by integration:

$$\int dx \Psi_a^*(x) \cdot \Psi_b(x) = c$$

In bracket notation, the two are written identically:

$$\langle a|b \rangle = c$$