Theorem: Orthogonal Vectors

Two nonzero vectors $\vec{u}$ and $\vec{v}$ are orthogonal if and only if $\vec{u} \cdot \vec{v} = 0$

Since $\cos(\theta) = \dfrac{\vec{u} \cdot \vec{v}}{|\vec{u}||\vec{v}|}$, $\vec{u} \cdot \vec{v} = 0$ if and only if $\theta = \dfrac{\pi}{2}$