u, v vectores $u \neq 0 \wedge v \neq 0$ QvC $p_u(v) = p_v(u)$
$v = \lambda u \rightarrow p_u(v) = v \wedge v = \theta u \rightarrow p_v(u) = u$
$p_u(v) = p_v(u) \equiv \frac{u \cdot v}{\|u\|^2} \cdot u = \frac{u \cdot v}{\|v\|^2} \cdot v \overset{u \cdot v \neq 0}{\equiv} \frac{\cancel{u \cdot v}}{\|u\|^2} \cdot u = \frac{\cancel{u \cdot v}}{\|v\|^2} \cdot v \equiv$
$\frac{u}{\|u\|^2} = \frac{v}{\|v\|^2} \cdot v \leftrightarrow u = \lambda \cdot v \wedge v = \theta u \wedge \lambda, \theta \in \Re \leftrightarrow u = v$
Si $u \cdot v = 0 \rightarrow \frac{u \cdot v}{\|u\|^2} \cdot u = \frac{u \cdot v}{\|v\|^2} \cdot v = 0$
$p_u(v) = p_v(u) \leftrightarrow u \cdot v = 0 \vee u = v$ ■