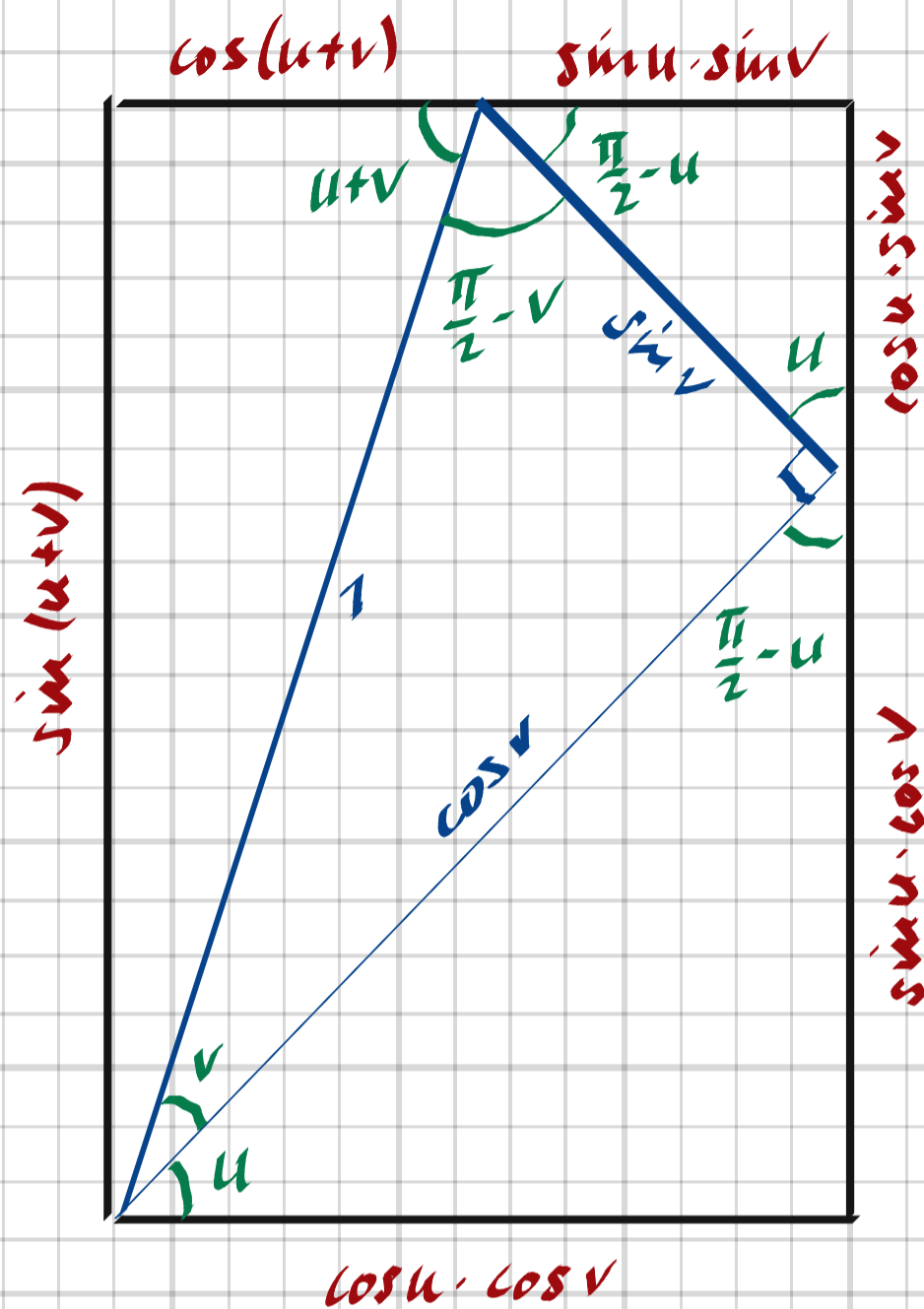


Additionsformeln



$$\sin(u+v) = \sin u \cdot \cos v + \cos u \cdot \sin v$$

$$\cos(u+v) = \cos u \cdot \cos v - \sin u \cdot \sin v$$

$$\sin(u-v) = \sin u \cdot \cos(-v) + \cos u \cdot \sin(-v)$$

$$\cos(u-v) = \cos u \cdot \cos(-v) - \sin u \cdot \sin(-v)$$

\Rightarrow

$$\sin(u-v) = \sin u \cdot \cos v - \cos u \cdot \sin v$$

$$\cos(u-v) = \cos u \cdot \cos v + \sin u \cdot \sin v$$

$$\sin(u \pm v) = \sin u \cdot \cos v \pm \cos u \cdot \sin v$$

$$\cos(u \pm v) = \cos u \cdot \cos v \mp \sin u \cdot \sin v$$

$$\sin(2u) = \sin u \cdot \cos u + \cos u \cdot \sin u$$
$$\cos(2u) = \cos u \cdot \cos u - \sin u \cdot \sin u$$

$$\sin(2u) = 2 \cdot \sin u \cdot \cos u$$
$$\cos(2u) = \cos^2 u - \sin^2 u$$

$$\sin^2 u + \cos^2 u = 1 \quad \Rightarrow$$

$$\cos(2u) = (1 - \sin^2 u) - \sin^2 u = 1 - 2\sin^2 u$$

$$\cos(2u) = \cos^2 u - (1 - \cos^2 u) = 2\cos^2 u - 1$$
