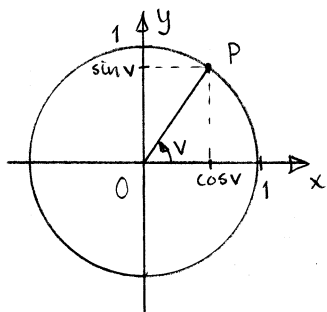


Definition av sinus, cosinus, tangens



Låt P vara skärningspunkten mellan enhetscirkeln och den stråle OP som bildar vinkeln v med positiva x-axeln. Då är

$$\sin v = y\text{-koordinaten för } P$$

$$\cos v = x\text{-koordinaten för } P$$

$$\tan v = \frac{\sin v}{\cos v}$$

Areasatsen

$$\text{Arean} = \frac{ab \sin C}{2} \quad (1)$$

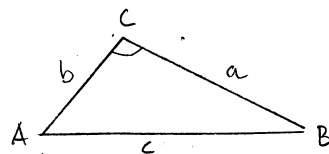
Sinussatsen

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c} \quad (2a)$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} \quad (2b)$$

Cosinussatsen

$$c^2 = a^2 + b^2 - 2ab \cos C \quad (3)$$



$\sin v$, $\cos v$, $\tan v$ är periodiska:

$$\sin(v + n \cdot 360^\circ) = \sin v, \quad n \text{ heltal} \quad (4a)$$

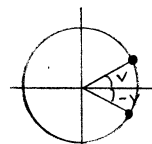
$$\cos(v + n \cdot 360^\circ) = \cos v, \quad n \text{ heltal} \quad (4b)$$

$$\tan(v + n \cdot 180^\circ) = \tan v, \quad n \text{ heltal} \quad (4c)$$

Diverse samband

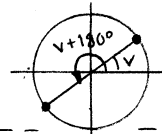
$$\sin(-v) = -\sin v \quad (5a)$$

$$\cos(-v) = \cos v \quad (5b)$$



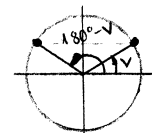
$$\sin(v + 180^\circ) = -\sin v \quad (6a)$$

$$\cos(v + 180^\circ) = -\cos v \quad (6b)$$



$$\sin(180^\circ - v) = \sin v \quad (7a)$$

$$\cos(180^\circ - v) = -\cos v \quad (7b)$$



$$\sin(90^\circ - v) = \cos v \quad (8a)$$

$$\cos(90^\circ - v) = \sin v \quad (8b)$$



TRIGONOMETRISKA ETTAN

$$\sin^2 v + \cos^2 v = 1 \quad (9)$$

$$\Rightarrow \sin^2 v = 1 - \cos^2 v \quad (9a)$$

$$\cos^2 v = 1 - \sin^2 v \quad (9b)$$

Additionssatserna

$$\sin(u+v) = \sin u \cdot \cos v + \cos u \cdot \sin v \quad (10a)$$

$$\sin(u-v) = \sin u \cdot \cos v - \cos u \cdot \sin v \quad (10b)$$

$$\cos(u+v) = \cos u \cdot \cos v - \sin u \cdot \sin v \quad (10c)$$

$$\cos(u-v) = \cos u \cdot \cos v + \sin u \cdot \sin v \quad (10d)$$

Dubbla vinkeln

$$\sin 2u = 2 \sin u \cdot \cos u \quad (11)$$

$$\cos 2u = \cos^2 u - \sin^2 u \quad (12)$$

$$= 1 - 2 \sin^2 u \quad (12b)$$

$$= 2 \cos^2 u - 1 \quad (12c)$$