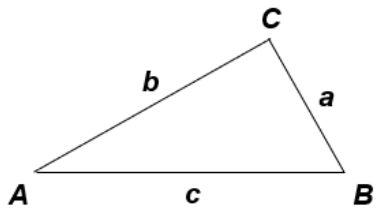
Trigonometri

sin, cos, tan
Rettvinklede trekanter

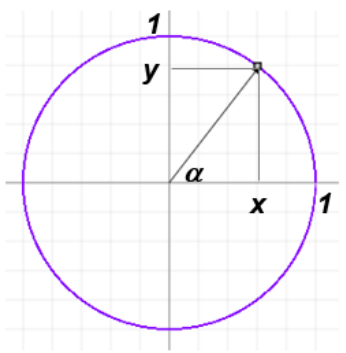


$$\sin A = \frac{a}{c}$$

$$\cos A = \frac{b}{c}$$

$$\tan A = \frac{a}{b}$$

sin, cos, tan
Enhetssirkel



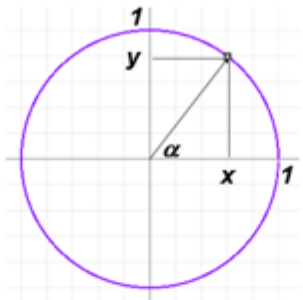
$$\sin \alpha = y$$

$$\cos \alpha = x$$

$$\tan \alpha = \frac{y}{x}$$

Trigonometri

Tabell



	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	π	2π
$\sin\alpha$	0	$\frac{1}{2}$	$\frac{1}{2}\sqrt{2}$	$\frac{1}{2}\sqrt{3}$	1	0	0
$\cos\alpha$	1	$\frac{1}{2}\sqrt{3}$	$\frac{1}{2}\sqrt{2}$	$\frac{1}{2}$	0	–1	1

Trigonometri

Relasjoner

$$\sin^2\alpha+\cos^2\alpha=1$$

$$\sin(-\alpha) = -\sin\alpha$$

$$\cos(-\alpha) = \cos\alpha$$

$$\sin\left(\frac{\pi}{2}-\alpha\right)=\cos\alpha$$

$$\cos\left(\frac{\pi}{2}-\alpha\right)=\sin\alpha$$

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

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

$$\sin v=\pm\sqrt{\frac{1-\cos 2v}{2}}$$

$$\cos v=\pm\sqrt{\frac{1+\cos 2v}{2}}$$

$$\sin u+\sin v = 2\sin\frac{u+v}{2}\cdot\cos\frac{u-v}{2}$$

$$\sin u-\sin v = 2\cos\frac{u+v}{2}\cdot\sin\frac{u-v}{2}$$

$$\cos u+\cos v = 2\cos\frac{u+v}{2}\cdot\cos\frac{u-v}{2}$$

$$\cos u-\cos v = -2\sin\frac{u+v}{2}\cdot\sin\frac{u-v}{2}$$

$$\frac{a}{\sin A}=\frac{b}{\sin B}=\frac{c}{\sin C}$$

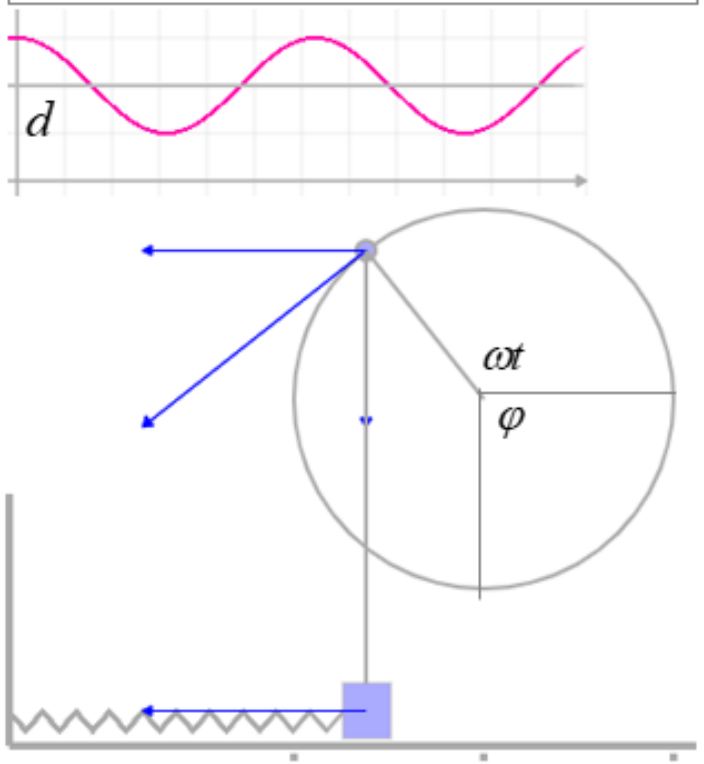
$$T=\frac{1}{2}ab\sin C=\frac{1}{2}ac\sin B=\frac{1}{2}bc\sin A$$

$$T=\sqrt{\frac{s}{2}\left(\frac{s}{2}-a\right)\left(\frac{s}{2}-b\right)\left(\frac{s}{2}-c\right)}$$

Trigonometri

SHM

$$y(t) = A\sin(\omega t + \varphi) + d$$



$y(t)$	Utslag ved tiden t	
d	Likevektlinje	
A	Amplitude	
ω	Vinkelhastighet	$\omega = 2\pi f = \frac{2\pi}{T}$
f	Frekvens	$f = \frac{1}{T} = \frac{\omega}{2\pi}$
T	Periode	$T = \frac{1}{f} = \frac{2\pi}{\omega}$
$\omega t + \varphi$	Fase	
φ / ω	Faseforskyvning	