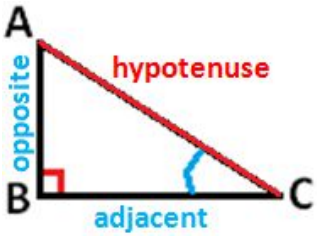
SINE COSINE TANGENT L10

-> degrees, radians

Trigonometric ratios in a right triangle



$$\cos C = \frac{length\ of\ the\ adjacent\ side}{length\ of\ the\ hypotenuse}$$

$$\sin C = \frac{length\ of\ the\ opposite\ side}{length\ of\ the\ hypotenuse}$$

$$\tan C = \frac{length\ of\ the\ opposite\ side}{length\ of\ the\ adjacent\ side}$$

Arccos arcsin arctan

"Arccos" is also called "the inverse cosine function". The inverse of "cos" is "arccos".
"Arccos A" means "the angle whose cosine is A" .

Example :

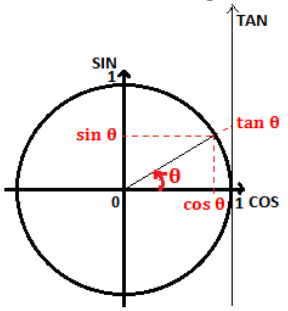
$cos\ 30° = \frac{\sqrt{3}}{2}$ means " The cosine of 30 degrees is $\frac{\sqrt{3}}{2}$.

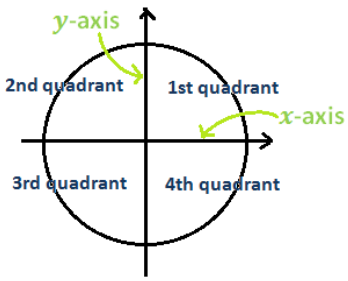
$\arccos \frac{\sqrt{3}}{2} = 30$ means" The angle whose cosine is $\frac{\sqrt{3}}{2}$ is 30 degrees.

We use it when we know what the cosine of an angle is, and want to know the actual angle.
-> arcsin, arctan

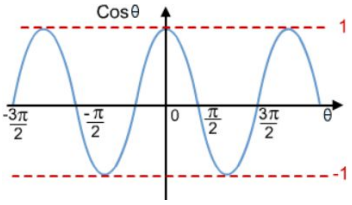
Unit circle

The unit circle is a circle with a radius equal to one, and centered at the origin.



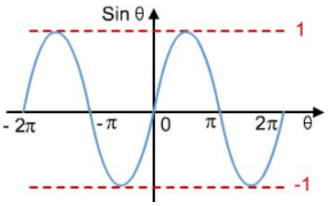


graph of cosine function



- continuous graph
- has a period of 2π
- domain = R
- range = [-1 ; 1]

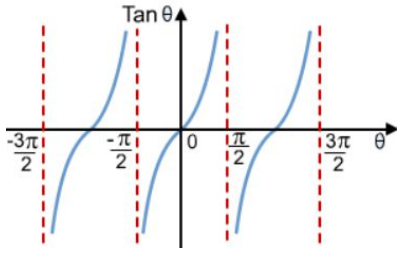
graph of sine function



- continuous graph
- has a period of 2π
- domain = R
- range = [-1 ; 1]

graph of tangent function

pas pour les secondes



- continuous graph but undefined when $\theta = \frac{\pi}{2} + k\pi, k \in Z$
- has a period of π
- domain = $R\backslash\{\frac{\pi}{2} + k\pi, k \in Z\}$
- range = R