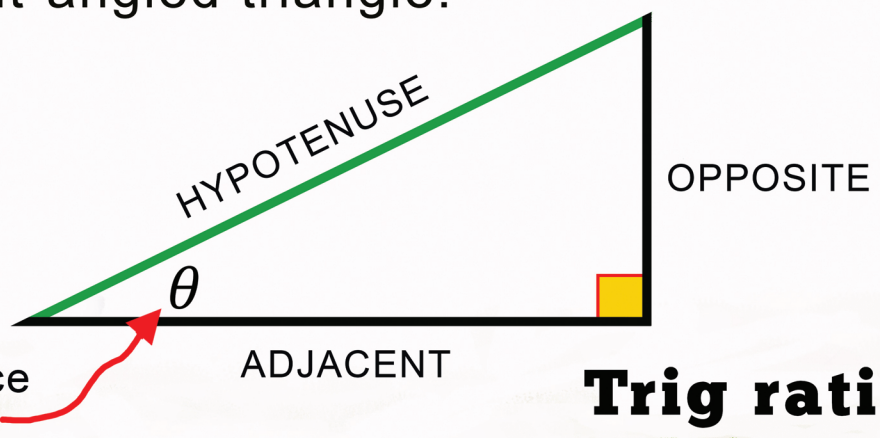
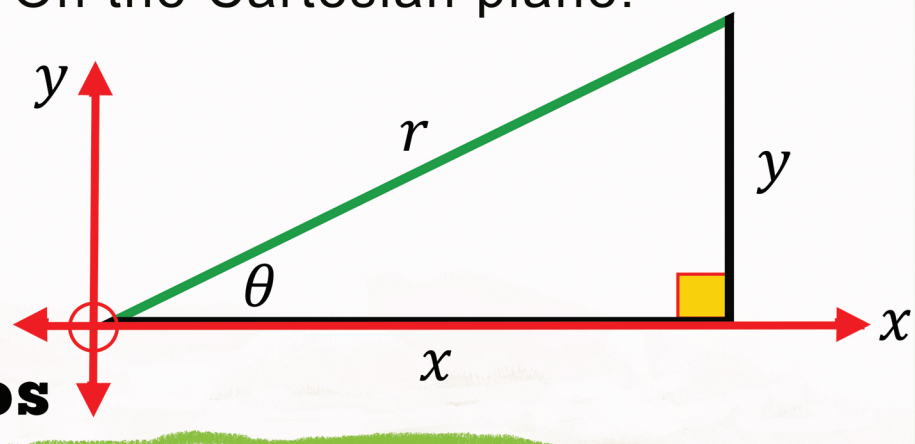
TRIGONOMETRY

In a right-angled triangle:



On the Cartesian plane:



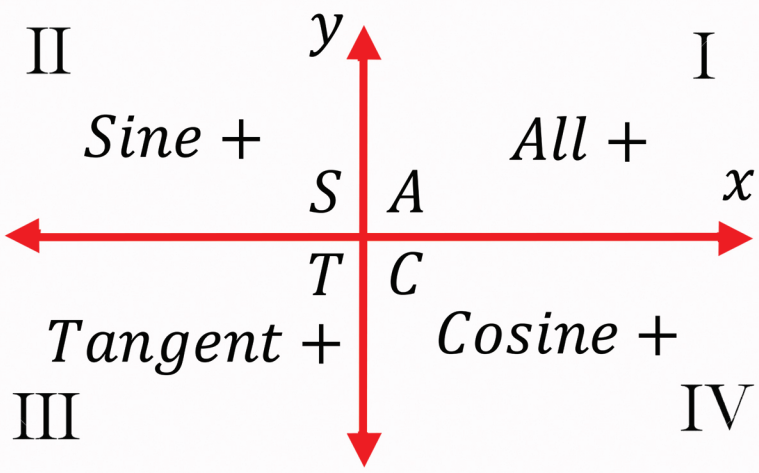
Trig ratios

SOH $Sin\,\theta = \frac{OPP}{HYP} = \frac{y}{r}$

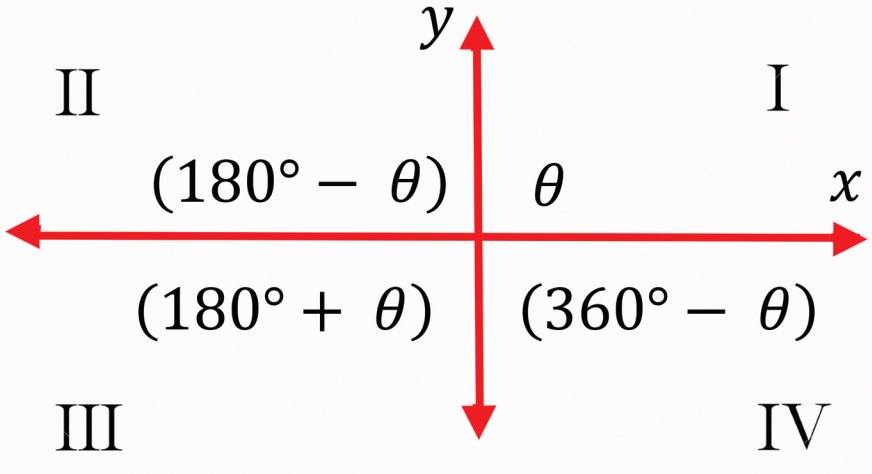
CAH $Cos\,\theta = \frac{ADJ}{HYP} = \frac{x}{r}$

TOA $Tan\,\theta = \frac{OPP}{ADJ} = \frac{y}{x}$

QUADRANTS



REDUCTION FORMULAE



IDENTITIES

$$tan\,\theta = \frac{sin\theta}{cos\theta}$$

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

CO-RATIOS

Quadrant I	Quadrant II
$sin(90° - \theta) = cos\,\theta$	$sin\,(90° + \theta) = cos\,\theta$
$cos(90° - \theta) = sin\,\theta$	$cos(90° + \theta) = -sin\,\theta$

COMPOUND ANGLES

$$cos(A + B) = cos\,A.cos\,B - sin\,A.sin\,B$$
$$cos(A - B) = cos\,A.cos\,B + sin\,A.sin\,B$$
$$sin(A + B) = sin\,A.cos\,B + cos\,A.sin\,B$$
$$sin(A - B) = sin\,A.cos\,B - cos\,A.sin\,B$$

DOUBLE ANGLES

$$sin\,2A = 2\,sin\,A\,cos\,A$$
$$cos\,2A = cos^2\,A - sin^2 A$$
$$\text{or } 1 - 2\,sin^2 A$$
$$\text{or } 2\,cos^2\,A - 1$$