

Year 1 Pure Chapter 9 - Trigonometric Ratios

Advanced Trigonometry

SIDE $a^2 = b^2 + c^2 - 2bc \cos A$

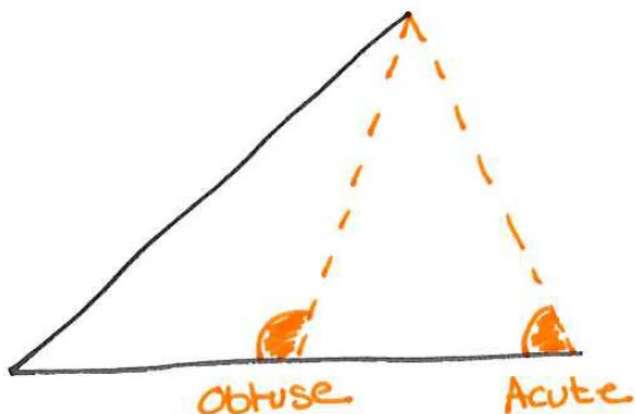
ANGLE $\cos A = \frac{a^2 - b^2 - c^2}{-2bc}$

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

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

AREA OF TRIANGLE $= \frac{1}{2}ab \sin C$

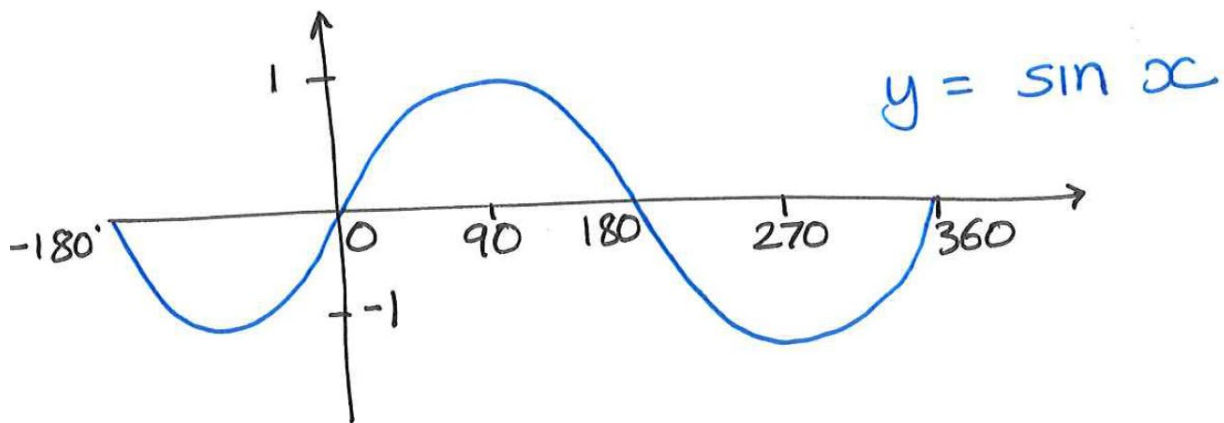
Obtuse and Acute Answers



$$\text{obtuse} = 180 - \text{acute}$$

$$\text{Acute} = 180 - \text{obtuse}$$

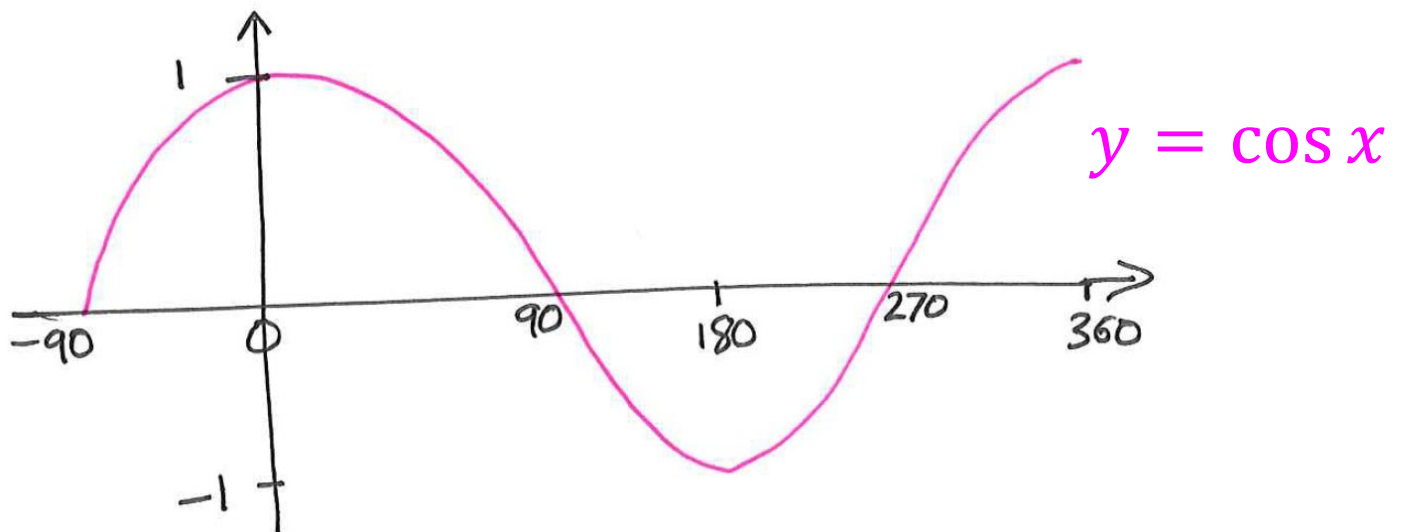
Transformation of Trigonometry Graphs



$$y = 3 + \frac{1}{3} \sin(2\theta - 45^\circ)$$

Annotations for the equation $y = 3 + \frac{1}{3} \sin(2\theta - 45^\circ)$:

- 3 : up 3
- $\frac{1}{3}$: max/min
- 2 : number of cycles in 360°
- -45° : right 45°



$$y = -2 + 2 \cos(3\theta + 90^\circ)$$

Annotations for the equation $y = -2 + 2 \cos(3\theta + 90^\circ)$:

- -2 : down 2
- 2 : max/min
- 3 : 3 cycles in 360°
- $+90^\circ$: left 90°