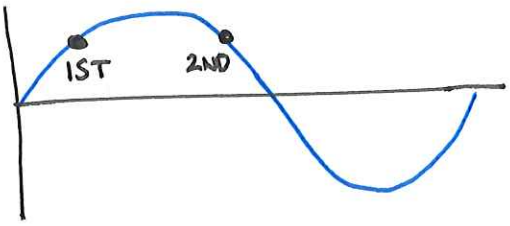
YEAR 1 PURE  Chapter 10  TRIG IDENTITIES + EQUATIONS

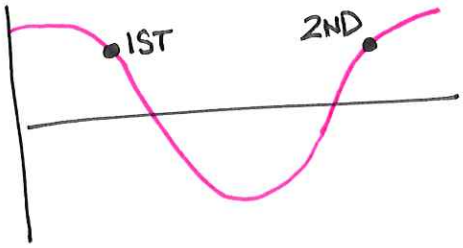
- EQUATIONS




1ST SOLUTION = $\sin^{-1} x$

2ND SOLUTION = 180 − 1st solution

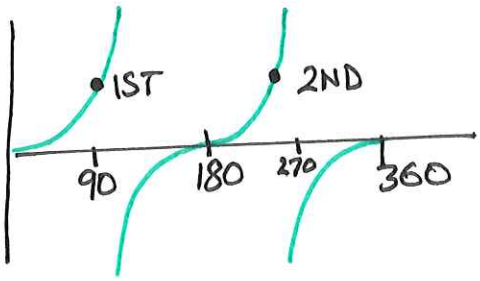
ALL OTHERS $\pm 360°$




1ST SOLUTION = $\cos^{-1}$

2ND SOLUTION = 360 − 1ST solution

ALL OTHERS $\pm 360°$




1ST SOLUTION = $\tan^{-1} x$

ALL OTHERS $\pm 180°$

WATCH OUT FOR : the range of answers needed

$\sin \theta = \frac{1}{2}$  $0 \leq \theta \leq 360$

$\sin 2\theta = \frac{1}{2}$  $0 \leq \theta \leq 360$ becomes $0 \leq 2\theta \leq 720$

$\sin(2\theta + 45) = \frac{1}{2}$  $0 \leq \theta \leq 360$ becomes $45 \leq 2\theta + 45 \leq 765$

# — IDENTITIES

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

Therefore $\sin^2\theta = 1 - \cos^2\theta$

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

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

Therefore $\frac{1}{\tan\theta} = \frac{\cos\theta}{\sin\theta}$