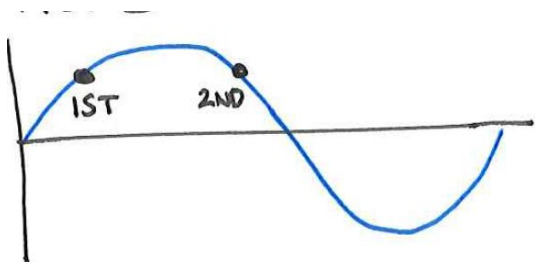
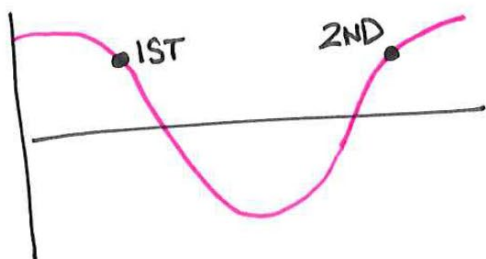


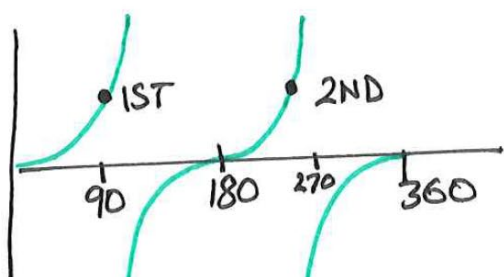
Finding Solutions



1ST SOLUTION = $\sin^{-1} x$
 2ND SOLUTION = $180 - \text{1st solution}$
 ALL OTHERS $\pm 360^\circ$



1ST SOLUTION = $\cos^{-1} x$
 2ND SOLUTION = $360 - \text{1st solution}$
 ALL OTHERS $\pm 360^\circ$



1ST SOLUTION = $\tan^{-1} x$
 ALL OTHERS $\pm 180^\circ$

Range of Answers

Watch out for the range of answers needed.

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

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

becomes

$$0 \leq 2\theta \leq 720$$

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

becomes

$$45 \leq 2\theta + 45 \leq 765$$

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