

Evaluating Trig Ratios

Example: $\sin 1750^\circ$

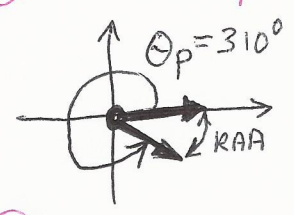
① Is 1750° a principal angle? How do you know?
 $0 \leq \theta_p < 360^\circ$ Then 1750° is not θ_p .

② We remove (or add) multiples of 360° (what are multiples of 360° ? $360^\circ, 720^\circ, 1080^\circ, 1440^\circ$)

$$\theta_p = 1750^\circ - 1440^\circ$$

$$\theta_p = 310^\circ$$

③ Draw θ_p in standard position?



This allows you to picture and find RAA.

④ Find RAA

$$RAA = 360^\circ - 310^\circ$$

$$RAA = 50^\circ$$

⑤ $\sin \theta_p = \pm \sin \theta_{RAA}$
 ↑
 CAST tells the tale.

$$\sin 310^\circ = \sin 50^\circ$$

QIV In QIV



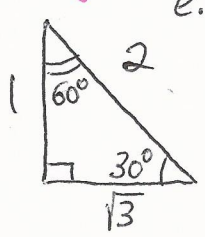
Sine is negative

$$\therefore \sin 1750^\circ = \sin 310^\circ = -\sin 50^\circ$$

↙ special angle.

⑥ Consult special triangles if dealing with a special angle.

e.g. $\sin 30^\circ = \frac{1}{2}$



$$\therefore \sin 1750^\circ = \sin 310^\circ = -\sin 50^\circ \stackrel{\text{calc}}{=} -0.7660$$

⑦ Check directly: $\sin 1750^\circ \stackrel{\text{calc}}{=} -0.7660$