

Finding Angles With the Calculator Part II (Std A4c)

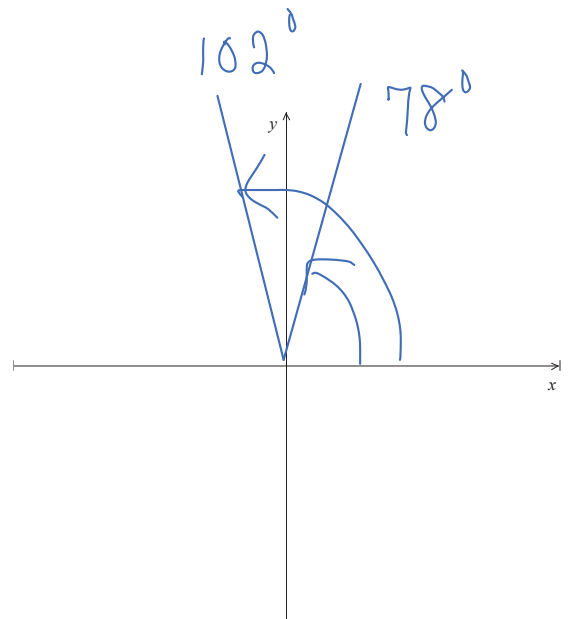
Name _____

Find all possible solutions to the given trig expression and sketch the two terminal sides on the axes below.
Start with angles between 0° and 360°

1) $\sin \theta = 0.9781476007 \Rightarrow \sin^{-1}(0.9781476007)$

$\theta = 78^\circ, 180 - 78^\circ = 102^\circ$

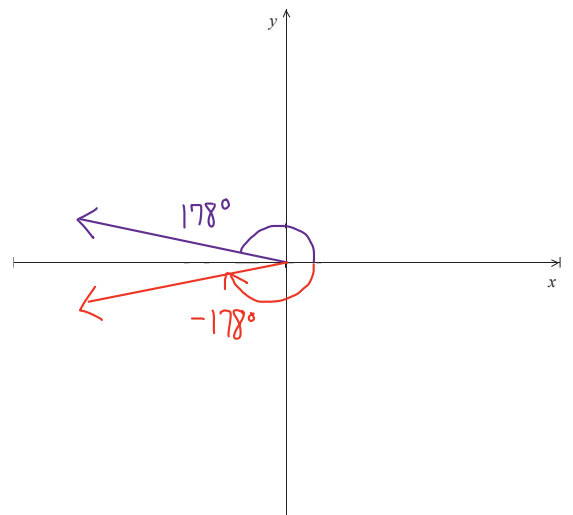
$\theta = \begin{cases} 78^\circ \pm 360^\circ n \\ 102^\circ \pm 360^\circ n \end{cases}$



2) $\cos \theta = -0.999390827$

$\cos^{-1}(-0.999390827) = 178^\circ$

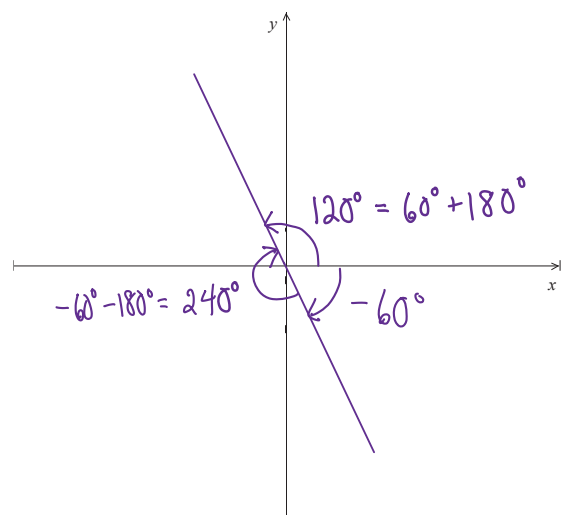
$\theta = \pm 178^\circ \pm 360^\circ n$



3) $\tan \theta = -1.732050808 = -\sqrt{3}$

$\theta = \tan^{-1}(-1.732050808)$

$= -60^\circ \pm 180^\circ n$



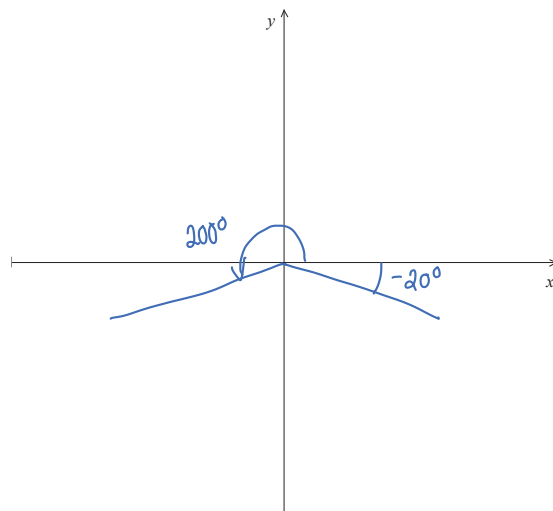
4) $\csc \theta = -2.9238044$

$$\sin^{-1}\left(\frac{1}{-2.9238044}\right)$$

$$\theta = -20^\circ$$

$$\theta = 180^\circ - (-20^\circ) = 200^\circ$$

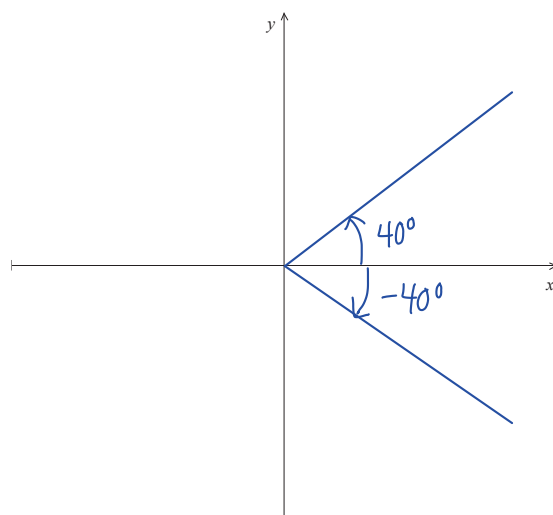
$$\theta = \left\{ \begin{array}{l} -20^\circ \pm 360^\circ n \\ 200^\circ \pm 360^\circ n \end{array} \right\} \text{ or } \left\{ \begin{array}{l} 340^\circ \pm 360^\circ n \\ 200^\circ \pm 360^\circ n \end{array} \right.$$



5) $\sec \theta = 1.305407289$

$$\theta = \cos^{-1}\left(\frac{1}{1.305407289}\right)$$

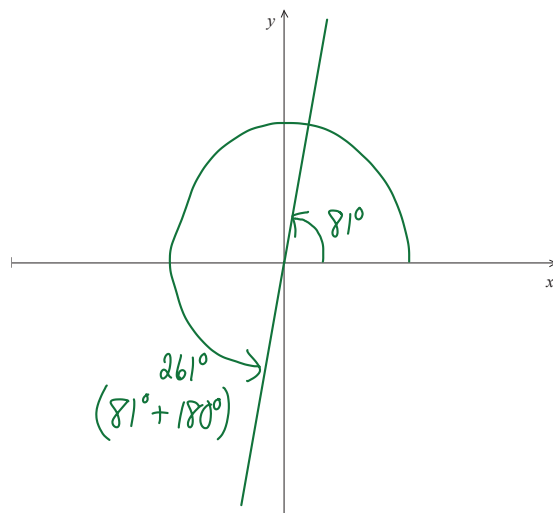
$$= \pm 40^\circ \pm 360^\circ n$$

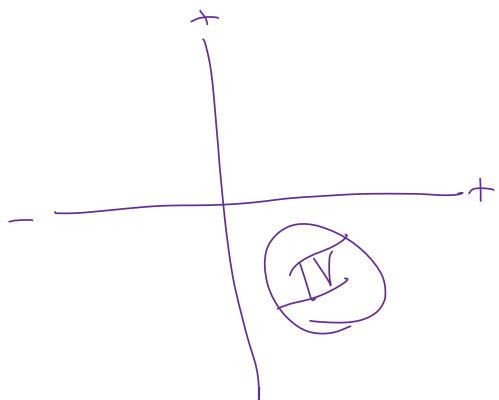


6) $\cot \theta = 0.1583844403$

$$\theta = \tan^{-1}\left(\frac{1}{0.1583844403}\right)$$

$$= 81^\circ \pm 180^\circ n$$



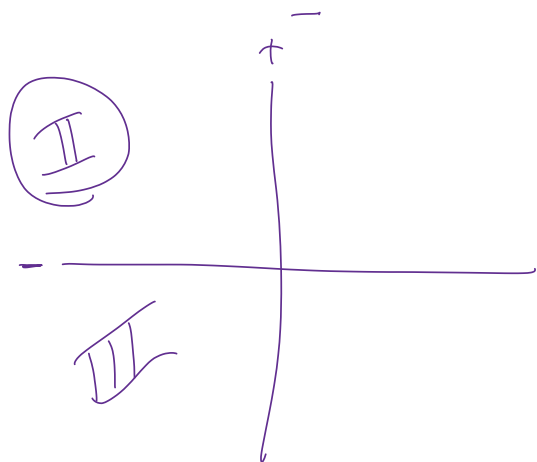


$$\sin \alpha = \frac{y}{r} \quad \tan \alpha = \frac{y}{x}$$

$$- = \frac{-y}{r} \quad - = \frac{-y}{x}$$

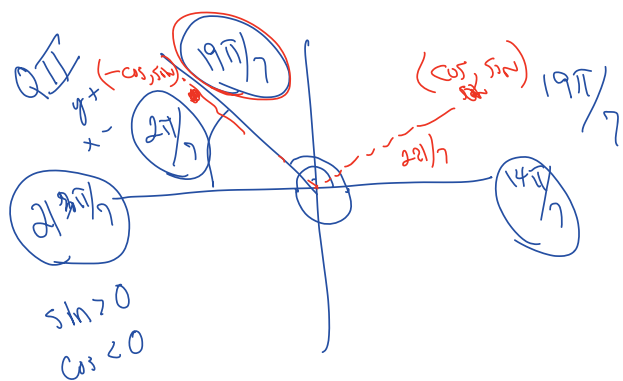
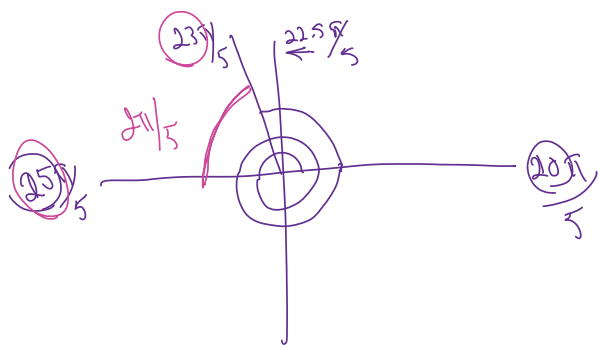
$$y < 0$$

$$x > 0$$



$$\sec \alpha = \frac{1}{\cos \alpha} = \frac{r}{x}$$

$$\tan \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{y}{-x}$$



Final Exam

- In person - you must be here
no options to work from home

- OSF on the other days

Cohort X - you will hear from me
Extended Time ^