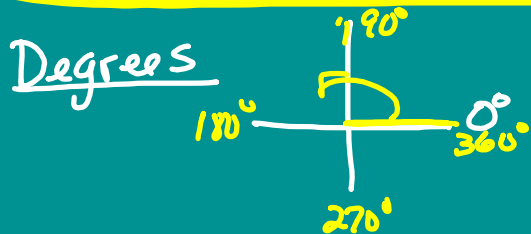
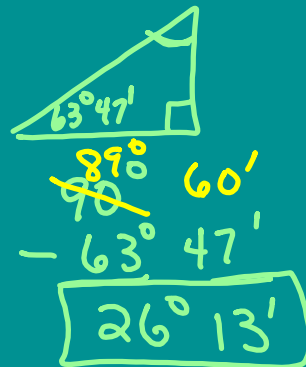


WELCOME TO TRIGONOMETRY!



$$\begin{array}{r}
 32^{\circ} 40' 51'' \\
 + 13^{\circ} 21' 11'' \\
 \hline
 46^{\circ} 5' 2''
 \end{array}$$

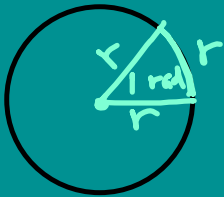
$$\begin{array}{l}
 1^{\circ} = 60' \\
 1' = 60''
 \end{array}$$



Converto Deg/Min/Sec
 36.52 ► DMS

RADIANS

$$50^\circ \cdot 3' = 150 \text{ deg} \cdot \text{ft}$$



$$1 \text{ rad} = 57.3^\circ$$

$$\frac{1 \text{ rad}}{r} = \frac{360^\circ}{2\pi r}$$

$$2\pi \text{ rad} = 360^\circ$$

$$\pi \text{ rad} = 180^\circ$$

Convert 100° to rad

$$100^\circ \cdot \frac{\pi \text{ rad}}{180^\circ} = \frac{10\pi}{18} = \frac{5\pi}{9} \text{ rad}$$

Convert to deg

$$\frac{5\pi}{9} \text{ rad} \cdot \frac{180^\circ}{\pi} = \frac{5 \cdot 180^\circ}{9} = 100^\circ$$

$$\frac{\text{Deg} \rightarrow \text{Rads}}{\times \frac{\pi}{180^\circ}}$$

$$\frac{\text{Rads} \rightarrow \text{Deg}}{\times \frac{180^\circ}{\pi}}$$

Coterminal angles

$$\begin{array}{r} 735^\circ \\ -720^\circ \\ \hline 15^\circ \end{array}$$

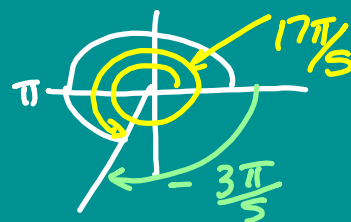
$$\boxed{-345^\circ}$$

$$\begin{array}{r} 360^\circ \\ -15^\circ \\ \hline 345^\circ \end{array}$$



- share same terminal side

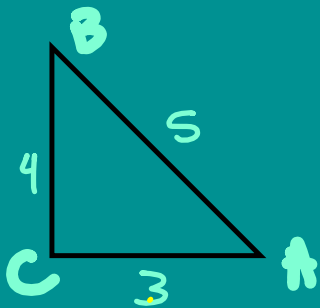
$$\begin{array}{r} 7\pi \\ 5 \end{array}$$



$$2\pi + \frac{7\pi}{5} =$$

$$\frac{2}{1} + \frac{7}{5} = \frac{10}{5} + \frac{7}{5} = \boxed{\frac{17\pi}{5}}$$

RIGHT Δ's



$$\cot A = \frac{\text{adj}}{\text{opp}} = \frac{3}{4}$$

$$\sec B = \frac{\text{hyp}}{\text{adj}} = \frac{5}{4}$$

Oscar had a heap of apples.
soh cah toa

$$\sin A = \frac{o}{h}$$

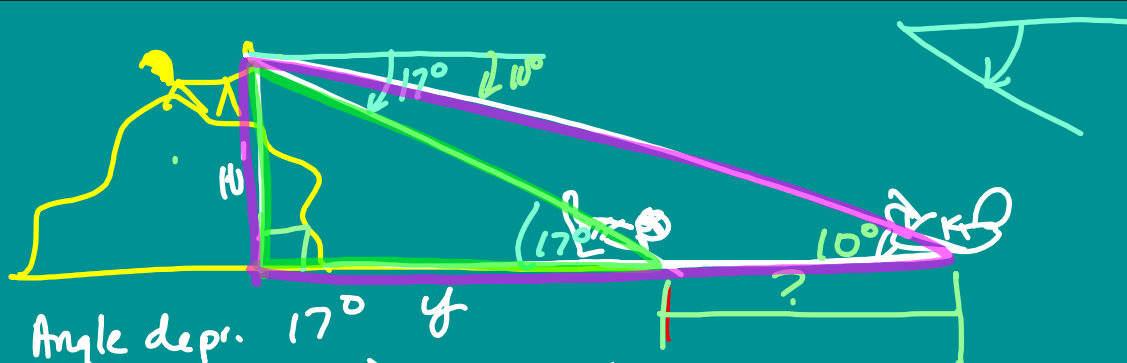
$$\cos A = \frac{a}{h}$$

$$\tan A = \frac{o}{a}$$

$$\csc A = \frac{h}{o}$$

$$\sec A = \frac{h}{a}$$

$$\cot A = \frac{a}{o}$$



Angle depr. 17° y

Angle depr. 10° x

Big Δ (pink)

$$x \cdot \tan 10^\circ = \frac{10}{x} \cdot x$$

$$x = \frac{10}{\tan 10^\circ}$$

$$x = 57'$$

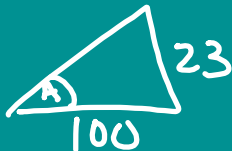
Little Δ (green)

$$\tan 17^\circ = \frac{10}{y}$$

$$y = \frac{10}{\tan 17^\circ}$$

$$y = 33'$$

$$\begin{array}{r} 57' \\ - 33' \\ \hline 24' \end{array}$$



$$\tan A = \frac{23}{100}$$

$$A = \tan^{-1}(23/100)$$

NAVIGATION

Ship
 Sail 76 mi @ 138°
 Turn 90 mi @ 48°
 What direction to sail
 to get back to port.

