INTRO TO TRIG REVIEW

Things to list

a) 3 trig func opp, adj, hypot
b) 6 trig func x, y, r

c)
$$\begin{array}{ccc} \frac{\sin\theta}{\cos\theta} & \frac{\sec\theta}{\csc\theta} & \frac{\tan\theta}{\cot\theta} \end{array}$$
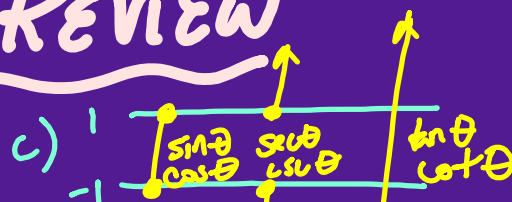
d) All Star Trig Class
e) Special angle table

1. Cotermined angles

$880°$

$460°$

$-200°$

2. $\sin(-\theta) = -\sin(\theta)$
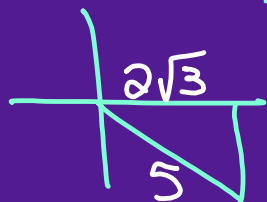
$$\begin{cases} \cos(-\theta) = \cos\theta \\ \sec(-\theta) = \sec(\theta) \end{cases}$$

$\tan(-\theta) = \frac{3}{7}$

$\tan(\theta) = -\frac{3}{7}$

$\cot(-\theta) = \frac{7}{3}$

3) Use All Star Trig Class

4/ Poss. or Imposs

$2\sec\alpha + 7 = 6$

$\dfrac{2\sec\alpha}{2} = \dfrac{-1}{2}$

$\sec\alpha = -\frac{1}{2}$

Imposs.

5-7) DRAW A PICTURE!

5-7 Given $\cos\theta = \dfrac{2\sqrt{3}}{5}\dfrac{x}{r}$ & $\tan\theta < 0$, find $\csc\theta$.

$\csc\theta = \dfrac{r}{y}$

$y = -\sqrt{13}$

$y^2 + (2\sqrt{3})^2 = 5^2$

$y^2 + 12 = 25$

$\sqrt{y^2} = \sqrt{13}$

$y = \pm\sqrt{13}$

$-\dfrac{5}{\sqrt{13}} \cdot \dfrac{\sqrt{13}}{\sqrt{13}}$

$= -\dfrac{5\sqrt{13}}{13}$

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8) Write $\cos 28°16'$ in terms of its cofunction.

complementary function

$89°60'$
$-28°16'$
$\overline{61°44'}$

$\boxed{\sin 61°44'}$

Write $\sec\dfrac{5\pi}{11}$ in terms of its cofunc.

$\dfrac{\pi}{2} - \dfrac{5\pi}{11}$

$= \dfrac{11\pi}{22} - \dfrac{10\pi}{22}$

$= \dfrac{\pi}{22}$

$\boxed{\csc \dfrac{\pi}{22}}$

9-11) Special angle values.

Convert to degrees

$$\frac{25\pi}{6} \cdot \frac{\cancel{180}^{\,30°}}{\cancel{\pi}} = 750°$$

$$1020° \cdot \frac{\pi}{180°} = \frac{1020\pi}{180} = \frac{51\pi}{9} = \boxed{\frac{17\pi}{3}}$$
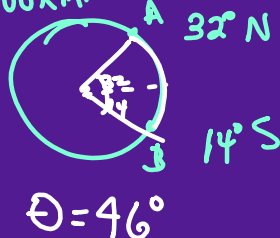
Do not memorize.

$$S = r\theta \qquad A = \frac{1}{2}\theta r^2 \qquad \omega = \frac{\theta}{t} \qquad V = \frac{S}{t} = \frac{r\theta}{t} = r \cdot \omega$$

A pizza is divided into 12 slices. What is the area of each slice if the pizza has a diam. of 18"?

$$A = \frac{1}{2}\theta r^2 = \frac{1}{2} \cdot \frac{30\pi}{180} \cdot 9" = 21.2 \text{ in}^2 \qquad \frac{360°}{12} = 30°$$

$r = 6400 \text{ Km}$

A — $32° N$

B — $14° S$

$\theta = 46°$

Find distance between $A + B$

$$S = r\theta$$
$$S = 6400 \cdot \left(\frac{46°\pi}{180°}\right) = 5128 \text{ Km}$$
$$\approx 5100 \text{ Km}$$

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* Superman spins at a rate of 2120 rav/min.
* His arm span is 78". How fast are the tips of his fingers moving in ft/sec.   1 rev = 2π rad

$$\text{Linear vel.} = \frac{r\theta}{t} = \frac{39 \cdot (2120 \cdot 2\pi)}{1 \text{ min}} \quad \overset{\text{in}}{\underset{\text{rad}}{}}$$

$$= 165360\pi \frac{\text{in}}{\text{min}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{1 \text{ min}}{60 \text{ sec}}$$
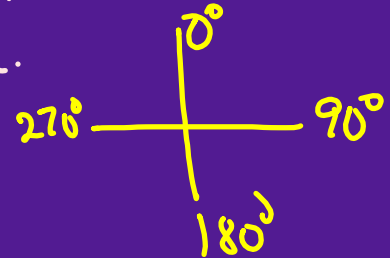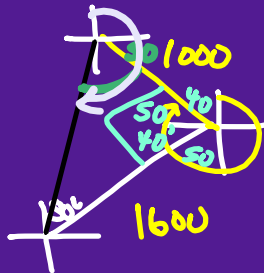
$$\approx 721.5$$

$$\approx 720 \frac{\text{ft}}{\text{sec}}$$

NAVIGATION

Roscoe heads across the field in a snowstorm
in the direction 50° & travels 1600 ft. He
then turns & travels 1000 ft in the direction
320°. What distance & direction must
he travel to return home.

$$\tan A = \frac{1600}{1000}$$

$$\tan^{-1}(1600/100)$$

$$= 58°$$

1000

1600

0°

270° —— 90°

180°

$$\begin{array}{r} 90° \\ +50° \\ +58° \\ \hline 198° \end{array}$$