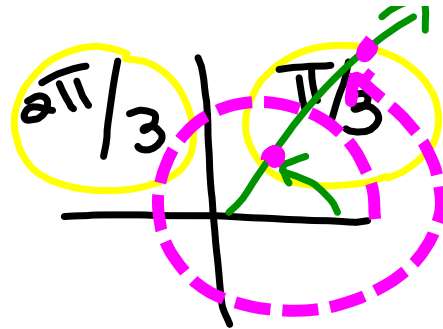


$$\sin(2x) = \frac{\sqrt{3}}{2}$$

$$\text{let } u = 2x$$

$$\sin u = \frac{\sqrt{3}}{2}$$



$$u = \frac{2\pi}{3} + 2\pi k$$

$$u = \frac{\pi}{3} + 2\pi k$$

$$\frac{1}{2} \cdot 2x = \left(\frac{2\pi}{3} + 2\pi k \right) \cdot \frac{1}{2}$$

$$\frac{1}{2} \cdot 2x = \left(\frac{\pi}{3} + 2\pi k \right) \cdot \frac{1}{2}$$

$$x = \frac{2\pi}{6} + \pi k$$

$$x = \frac{\pi}{6} + \pi k$$

$$x = \frac{\pi}{6} + \pi k$$

If $k=1$

$$\frac{\pi}{6} + \frac{3\pi}{6} = \frac{4\pi}{6}$$

$$\frac{\pi}{6} + \frac{6\pi}{6}$$

$$= \frac{7\pi}{6} \quad \checkmark$$

Solns $\frac{\pi}{6}, \frac{\pi}{6}, \frac{4\pi}{6}, \frac{7\pi}{6}$

$$\cos\left(\frac{x}{2}\right) = \frac{\sqrt{3}}{2}$$

let $u = \frac{x}{2}$

$$\cos u = \frac{\sqrt{3}}{2}$$

$$u = \frac{\pi}{6} + 2\pi k$$

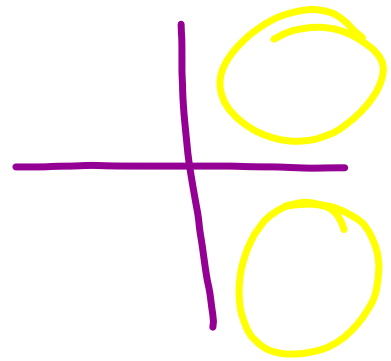
$$u = \frac{11\pi}{6} + 2\pi k$$

↓

$$\frac{x}{2} = \frac{\pi}{6} + 2\pi k$$

$$x = \frac{2\pi}{6} + 4\pi k$$

$$x = \frac{\pi}{3}$$



$$\frac{x}{2} = \frac{11\pi}{6} + 2\pi k$$

~~$$x = \frac{22\pi}{6} + 4\pi k$$~~

greater than 2π

U 8 L # 1 LOS \rightarrow Degree mode

1). $m\angle B = 57^\circ$ $m\angle C = 78^\circ$
 $b = 6 \text{ cm}$ $c = 7 \text{ cm}$

$$\frac{\sin B}{b} = \frac{\sin 57^\circ}{6} \qquad \frac{\sin C}{c} = \frac{\sin 78^\circ}{7}$$

$$\frac{\sin B}{b} \cdot 1398 = \frac{\sin C}{c} \cdot 1397 = \frac{\sin A}{a}$$

Since $A + B + C = 180$
 $A + 57 + 78 = 180$
 $A + 135 = 180$

$A = 45^\circ$

$$\frac{\sin 57^\circ}{6} = \frac{\sin 45^\circ}{a}$$

$$a \sin 57^\circ = 6 \sin 45^\circ$$

LOS

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

$$a = \frac{6 \sin 45^\circ}{\sin 57^\circ}$$

$$a \approx 5.0588$$

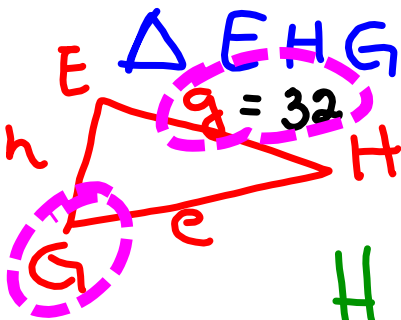
Round to nearest 1000th

$$\therefore a = 5.06$$

SOLVE a $\Delta \rightarrow$ find all \angle s and side lengths.

Ex 2B

$H = 37^\circ 10'$ $G = 42^\circ 20'$
 $g = 32$



Convert minutes into decimal degrees

$H = 37^\circ 10'$
 $H = 37.17^\circ$

$10' \cdot \frac{1^\circ}{60} = \frac{1}{6} \approx .17^\circ$

$G = 42^\circ 20'$
 $G = 42.33^\circ$

$\rightarrow 20' \cdot \frac{1^\circ}{60} = \frac{1}{3} \approx .33^\circ$

$$\frac{\sin G}{g} = \frac{\sin H}{h}$$

$$\frac{\sin 42.33}{32} = \frac{\sin 37.17}{h}$$

$$h = \frac{32 \sin 37.17}{\sin 42.33}$$

acts as []

$$h = 28.7$$

$$E = 180 - 37.17 - 42.33$$

Δ s add to 180 \rightarrow
 $180 - H - G$

$$E = 180 - 379.5 = 100.5^\circ$$

$$\frac{\sin G}{g} = \frac{\sin F}{e}$$

$$\frac{\sin 42.33}{32} = \frac{\sin 100.5}{e}$$



need a side-angle match →

$$\frac{\sin C}{c} = \frac{\sin B}{b}$$

$$\frac{\sin 9}{10} = \frac{\sin 100}{b}$$

$$b = (10 \sin 100) \div \sin 9$$

$$b = 63 \text{ km}$$

$$b = 63 \text{ km}$$

$$180 - 71 - 100 = 9^\circ$$

$$\frac{\sin 9}{10} = \frac{\sin 71}{a}$$

$$a = 60.4 \text{ km}$$

R2 is closer by 2.6 km.

LOS notes #1 p. 2

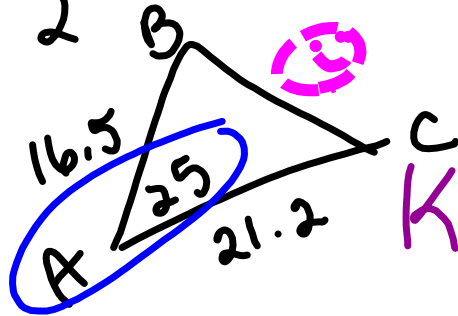
$$K = \text{Area}$$

$$K = \frac{1}{2} bc \sin A$$

$$K = \frac{1}{2} ab \sin C$$

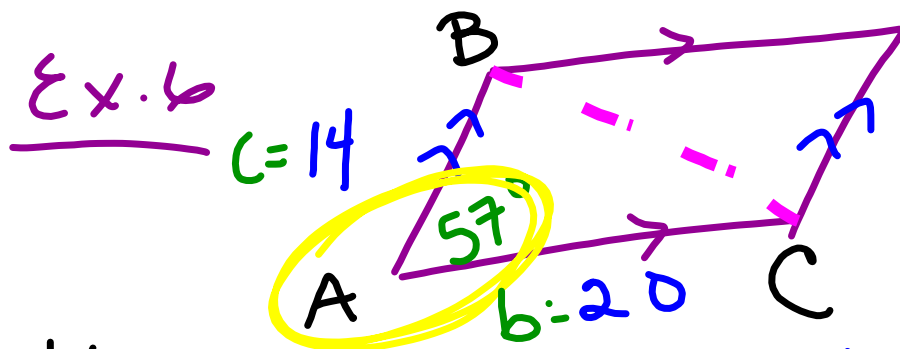
$$K = \frac{1}{2} ac \sin B$$

Ex. 4



$$K = \frac{1}{2} bc \sin A$$

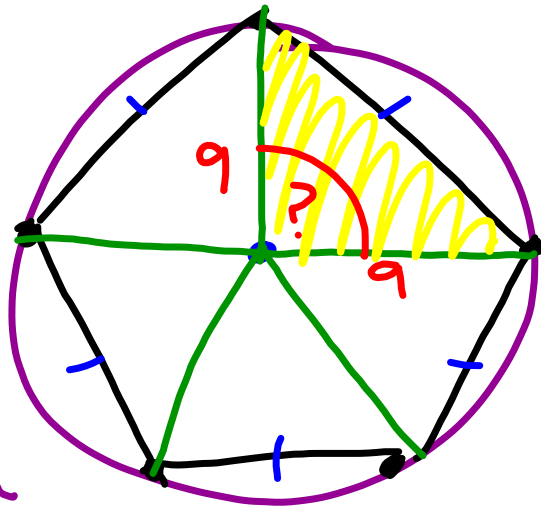
$$K = \frac{1}{2} (21.2)(16.5) \sin 25^\circ$$



$$K_{\Delta} = \frac{1}{2} bc \sin A = \frac{1}{2} (20)(14) \sin 57^\circ$$
$$= 117.41 \text{ sq cm}$$
$$\times 2$$

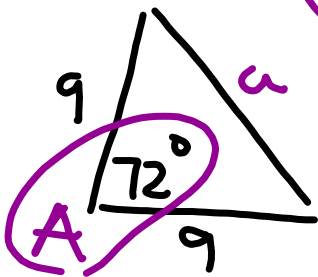
$$234.82 \text{ cm}^2$$

6b



$$\begin{aligned} &? \Delta \\ & \frac{360^\circ}{5 \text{ central } \Delta s} \\ & = 72^\circ = \Delta \end{aligned}$$

$$? \Delta = 72^\circ$$



$$\begin{aligned} K_{\Delta} &= \frac{1}{2} \cdot 9 \cdot 9 \sin 72 \\ &= 38.52 \end{aligned}$$

x 5 DS

196.6 in² Total area

Δ dep



Practice #1 LDS due Tues, May 29th 5.

Review sheets for test due

Thurs 5/24.