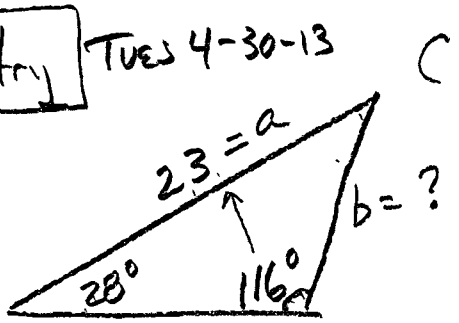
Geometry Tues 4-30-13

Class Notes

(41)



$a = 23$ $A = 116°$ QII

$b = 12.0$ $B = 28°$

$c = 15.0$ $C = 36°$

AAS ⇒ LOS

S/A $\theta = 116° \Rightarrow \theta' = 64°$ → $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

$C = 180 - (116 + 28) = 180 - 144 = \underline{36°}$

$\frac{\sin 64}{23} \quad \frac{\sin 28}{b}$

$\frac{b \sin 64}{\sin 64} = \frac{23 \sin 28}{\sin 64}$

$b = \frac{23(.4695)}{(.8988)} = \underline{12.01}$

$\frac{\sin 64}{23} = \frac{\sin 36}{c}$

$c = \frac{23 \sin 36}{\sin 64} = \frac{23(.5878)}{.8988} = \underline{15.04}$

LAW OF SINES PRACTICE

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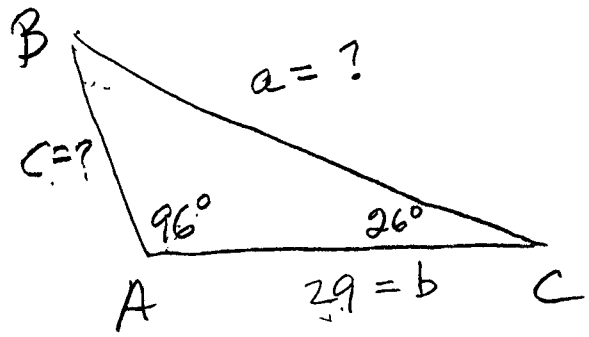


$a = 34.0$ $A = 96°$

$b = 29$ $B = 58°$

$c = 15.0$ $C = 26°$

A'SA = LOS

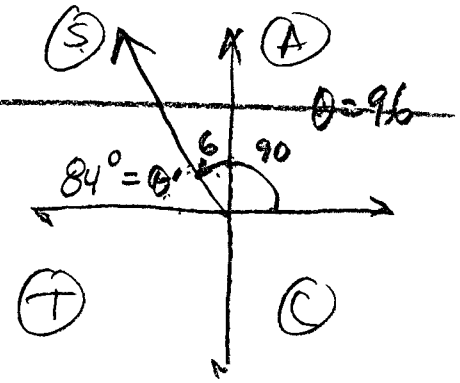
$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

$B = 180 - (96+26)$

$B = 58°$

ref angle?

$\frac{\sin 96}{a} = \frac{\sin 58}{29}$



~~$\frac{\sin 84}{a} = \frac{\sin 58}{29}$~~

$\frac{a \sin 58}{\sin 58} = \frac{29 \sin 84}{\sin 58}$

$a = \frac{29(.9945)}{(.8480)} = 34.010$

$\frac{\sin 26}{c} = \frac{\sin 58}{29}$

$c = \frac{29 \sin 26}{\sin 58} = \frac{29(.4384)}{(.8480)} = 14.992$

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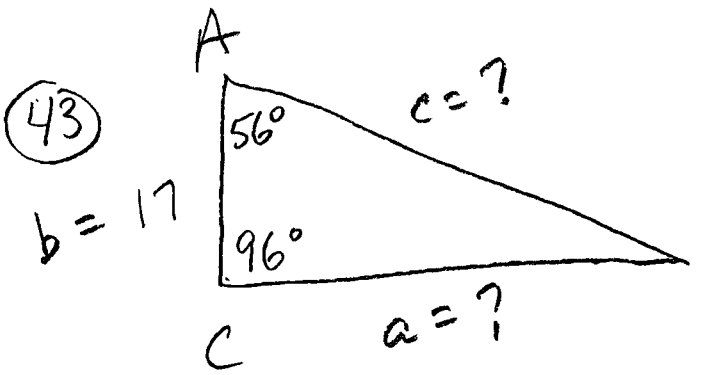

$a = 30.0$ $A = 56°$

$b = 17$ $B = 28°$

$c = 36.0$ $C = 96°$

$B = 180 - (96 + 56) = 180 - 152 = 28°$

Tan Table

$$\frac{\sin 28^\circ}{17} = \frac{\sin 84}{c}$$

$$c = \frac{17 \sin 84}{\sin 28} = \frac{17(.9945)}{(.4695)}$$

$$c \approx \underline{36.01}$$

$$\frac{\sin 28}{17} = \frac{\sin 56}{a}$$

$$a = \frac{17 \sin 56}{\sin 28} = \frac{17(.8290)}{(.4695)}$$

$$a \approx \underline{30.02}$$

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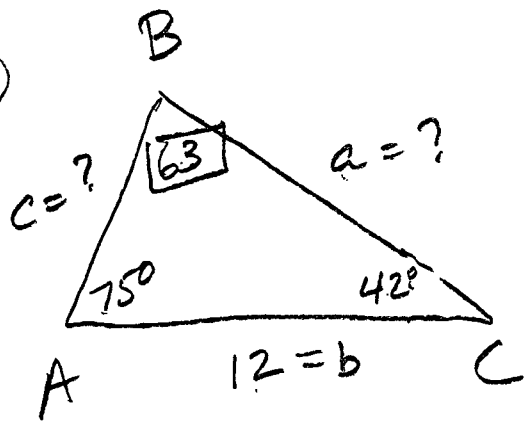


$a = 13.0$ $A = 75°$

$b = 12$ $B = 63°$

$C = 9.0$ $C = 42°$

ASA = LOS

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

$B \Rightarrow 180 - (75+42) = 180 - 117 = \underline{63°}$

$$\frac{\sin 63}{12} = \frac{\sin 75}{a}$$

$$\frac{a \sin 63}{\sin 63} = \frac{12 \sin 75}{\sin 63}$$

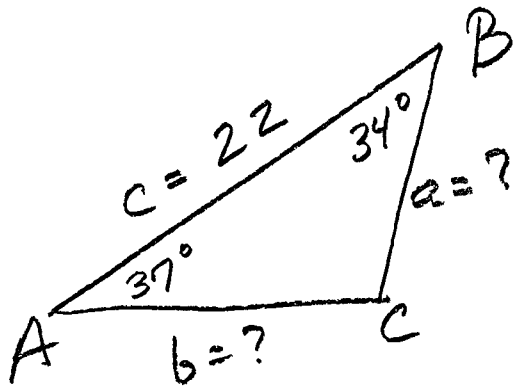
$$a = \frac{12(.9659)}{(.8910)} = \underline{13.008}$$

$$\frac{\sin 63}{12} = \frac{\sin 42}{c}$$

$$\frac{c \sin 63}{\sin 63} = \frac{12 \sin 42}{\sin 63}$$

$$c = \frac{12(.6691)}{(.8910)} = \underline{9.011}$$

(45)



$a = 14.0$ $A = 37°$

$b = 13.0$ $B = 34°$

$c = 22$ $C = 109°$

ASA ⇒ LOS

$C = 180 - (37+34) = 180 - (71) = \underline{109°}$

$\therefore \theta' = 71°$

θ'

$$\frac{\sin 71°}{22} = \frac{\sin 37}{a}$$

$$a \sin 71 = 22 \sin 37 \therefore a = \frac{22 \sin 37}{\sin 71}$$

$$a = \frac{22(.6018)}{(.9455)}$$

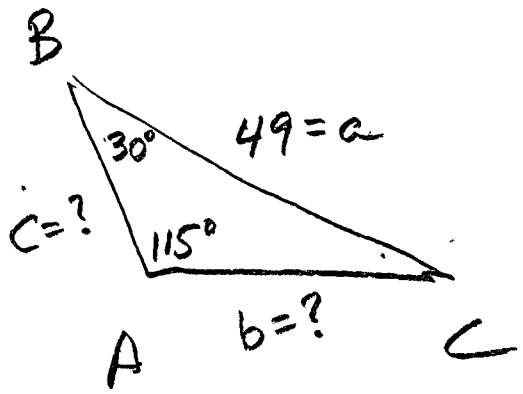
$a = 14.00$

$$\frac{\sin 71}{22} = \frac{\sin 34}{b}$$

$$\therefore b = (\sin 34)\left(\frac{22}{\sin 71}\right) = \frac{22(.5592)}{(.9455)}$$

$b = \underline{13.01}$

(53)



$a = 49$ $A = 115°$

$b = 27.0$ $B = 30°$

$c = 31.0$ $C = 35°$

AAS ⇒ LOS

$$C = 180 - (115 + 30) = 180 - 145 = \underline{35°}$$

REF. ∠ = 65°

$$\frac{\sin 115°}{49} = \frac{\sin 30°}{b}$$

$$\frac{b \sin 65}{\sin 65} = \frac{49 \sin 30}{\sin 65} = \frac{49(.5000)}{(.9063)}$$

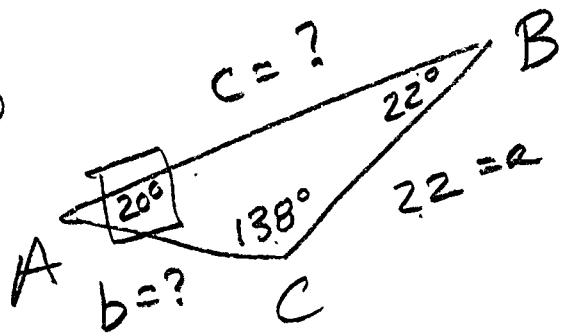
$$b = \underline{27.032}$$

$$\frac{\sin 35°}{c} = \frac{\sin 65}{49}$$

$$\frac{c \sin 65}{\sin 65} = \frac{49 \sin 35}{\sin 65}$$

$$C = \frac{49(.5736)}{(.9063)} = \underline{31.01}$$

(64)



$a = 22$ $\quad A = 20°$

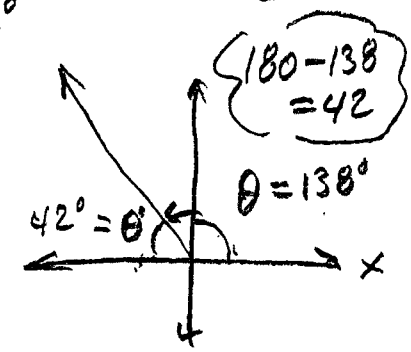
$b = 24.1$ $\quad B = 22°$

$c = 43.0$ $\quad C = 138°$

ASA = LOS

$A \Rightarrow 180 - (138+22) = 180 - 160 = \underline{20°}$

Ref 42°



$$\frac{\sin 20}{22} = \frac{\sin 138}{c}$$

$$\frac{\sin 20}{22} = \frac{\sin 42}{c}$$

$$\frac{c \sin 20}{\sin 20} = \frac{22 \sin 42}{\sin 20}$$

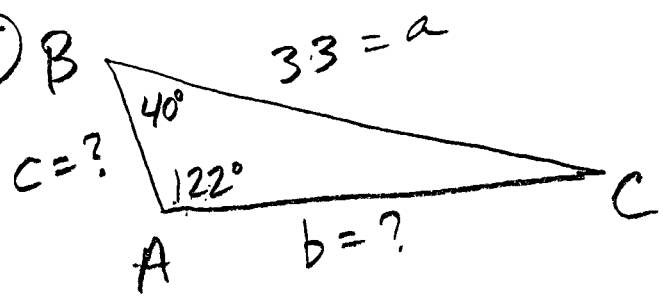
$$c = \frac{22(.6691)}{(.3420)} = \underline{43.041}$$

$$\frac{\sin 20}{22} = \frac{\sin 22}{b}$$

$$\frac{b \sin 20}{\sin 20} = \frac{22 \sin 22}{\sin 20} = \frac{22(.3746)}{(.3420)}$$

$$b = \underline{24.097}$$

(65)



$a = 33$ $A = 122°$

$b = 25.0$ $B = 40°$

$c = 12.0$ $C = 18°$

AAS ⇒ LOS

$C \Rightarrow 180 - (122 + 40) = 180 - 162 = \underline{18°}$

ref = 58°

$$\frac{\sin 122}{33} = \frac{\sin 40}{b}$$

(ref)

$$\frac{b \sin 58}{\sin 58} = \frac{33 \sin 40}{\sin 58}$$

$$b = \frac{33(.6428)}{(.8480)} = \underline{25.015}$$

$$\frac{\sin 18°}{c} = \frac{\sin 58}{33}$$

$$c = \frac{(\sin 18)\,33}{(\sin 58)} = \frac{(.3090)(33)}{(.8480)}$$

$$c = \underline{12.025}$$