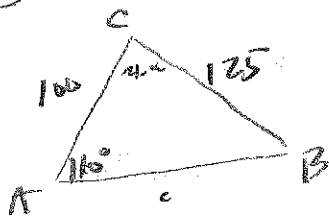


19)  $A = 110^\circ$ ,  $a = 125$ ,  $b = 100$



$$\frac{125}{\sin 110} = \frac{100}{\sin B}$$

$$\sin B = 100 \left( \frac{\sin 110}{125} \right) \approx .7518$$

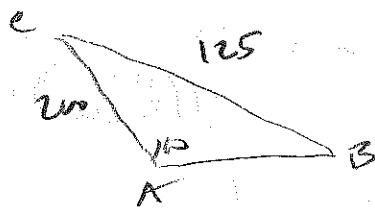
$$\Rightarrow B \approx 48.74^\circ$$

$$\Rightarrow C \approx 21.26^\circ$$

$$\Rightarrow c = \sin 21.26 \left( \frac{125}{\sin 110} \right) \approx 48.23$$

$$\frac{c}{\sin 21.26} = \frac{125}{\sin 110}$$

20)  $A = 110^\circ$ ,  $a = 125$ ,  $b = 200$



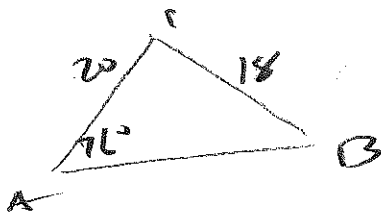
$$\frac{\sin 110}{125} = \frac{\sin B}{200}$$

$$\sin B = 200 \left( \frac{\sin 110}{125} \right) \approx 1.5$$

$\therefore$  no solution !!

$\sin \leq 1$  !!

21)  $A = 76^\circ$ ,  $a = 18$ ,  $b = 20$

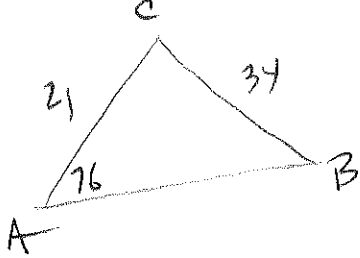


$$\frac{\sin 76^\circ}{18} = \frac{\sin B}{20}$$

$$\sin B = 20 \left( \frac{\sin 76^\circ}{18} \right) = 1.07$$

$\therefore$  no solution !!  $\sin \leq 1$  !!

22)  $A = 76^\circ$ ,  $a = 34$ ,  $b = 21$



$$\frac{\sin 76}{34} = \frac{\sin B}{21}$$

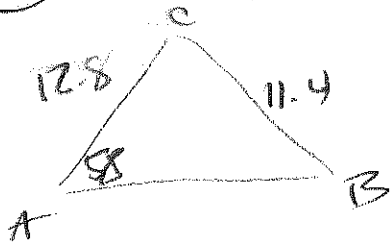
$$\sin B = 21 \left( \frac{\sin 76}{34} \right) \approx .5993$$

$$\Rightarrow B \approx 36.82^\circ \quad \frac{\sin 67.18}{x} = \frac{\sin 76}{34}$$

$$\Rightarrow C \approx 67.18^\circ$$

$$c \approx \sin 67.18 \left( \frac{34}{\sin 76} \right) \approx 32.30$$

23)  $A = 58^\circ$ ,  $a = 11.4$ ,  $b = 12.8$



$$\frac{\sin 58}{11.4} = \frac{\sin B}{12.8}$$

$$\sin B = 12.8 \left( \frac{\sin 58}{11.4} \right) \approx .9522$$

$$\Rightarrow B \approx 72.21^\circ \Rightarrow c \approx 49.79$$

$$\Rightarrow c \approx \sin 49.79 \left( \frac{11.4}{\sin 58} \right) \approx 10.27$$

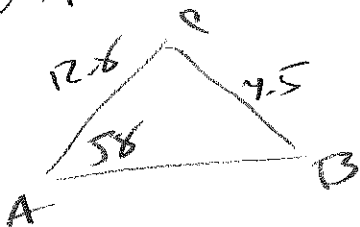
or

$$B \approx 107.79^\circ \Rightarrow c \approx 14.21$$

$$\Rightarrow c = \sin 14.21 \left( \frac{11.4}{\sin 58} \right) \approx 3.30$$

2 answers!

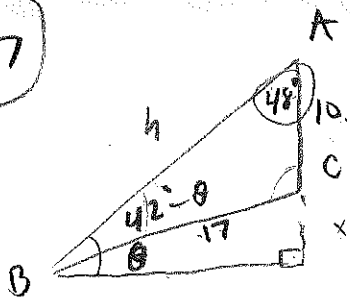
24)  $A = 58^\circ$ ,  $a = 4.5$ ,  $b = 12.8$



$$\sin B = 12.8 \left( \frac{\sin 58}{4.5} \right) \approx 2.41$$

$\therefore$  no solution!  $\sin \leq 1!$

37



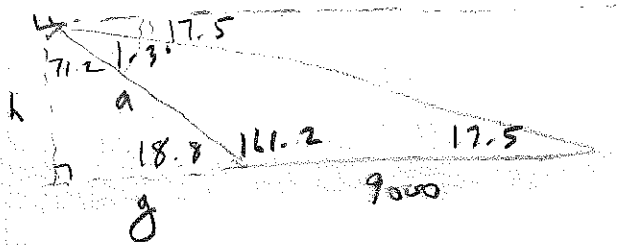
$$\frac{\sin(42-\theta)}{10} = \frac{\sin 48}{17}$$

$$\sin(42-\theta) = 10 \left( \frac{\sin 48}{17} \right) \approx .4371$$

$$\Rightarrow 42-\theta \approx 25.92^\circ$$

$$\Rightarrow \theta \approx 16.08^\circ$$

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$$\frac{a}{\sin 17.5} = \frac{9000}{\sin 1.3}$$

$$a = \sin 17.5 \left( \frac{9000}{\sin 1.3} \right)$$

$$\approx 119,289.1261 \text{ ft}$$

$$\approx 22.6 \text{ miles}$$

$$\frac{g}{\sin 71.2} = \frac{22.6}{\sin 90}$$

$$g = \sin 71.2 (22.6)$$

$$\approx 21.4 \text{ miles}$$

$$\frac{h}{\sin 18.8} = \frac{22.6}{\sin 90}$$

$$h = \sin 18.8 (22.6)$$

$$\approx 7.3 \text{ miles}$$

