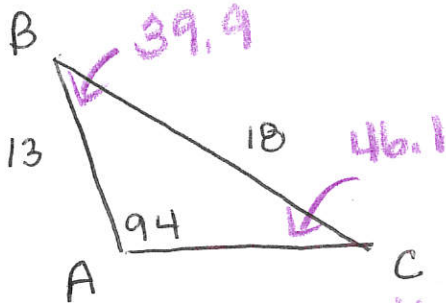


SOLVE each triangle.

1. Given  $A = 94$  degrees,  $a = 18$  and  $c = 13$



$$\frac{\sin C}{13} = \frac{\sin 94}{18}$$

$$\sin C = \frac{13 \sin 94}{18} \approx .7205$$

$$C = 46.1^\circ$$

one solution  
A is obtuse ✓

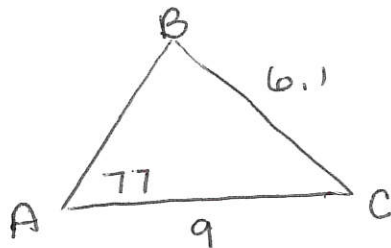
$$\begin{aligned} \angle B &= 180 - 94 - 46.1 \\ &= 39.9^\circ \\ b &\rightarrow \frac{\sin B}{b} = \frac{\sin 94}{18} \end{aligned}$$

$$b = 11.6$$

$$\begin{aligned} \text{or } 180 - 46.1 &= \\ &133.9 \\ &+ 94 \\ &\hline &227.9 \end{aligned}$$

TWO BIG.

2.  $A = 77$  degrees,  $a = 6.1$ , and  $b = 9$

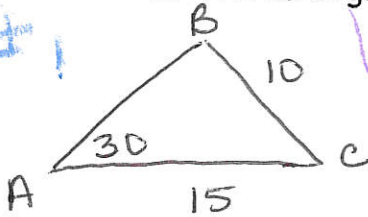


$$\sin > 1$$

no  $\Delta$

$$\begin{aligned} \frac{\sin 77}{6.1} &= \frac{\sin B}{9} \\ \sin B &= \frac{9 \sin 77}{6.1} = 1.4375 \end{aligned}$$

3.  $A = 30$  degrees,  $a = 10$ ,  $b = 15$



$$\frac{\sin 30}{10} = \frac{\sin B}{15}$$

$$\sin B = \frac{15 \sin 30}{10}$$

$$\sin B = .75$$

$$B = \sin^{-1} .75$$

$$B = 48.59^\circ$$

2  $\Delta$ s

check

$$180 - 48.59 = 131.41$$

$$+ 30$$

$$\hline 161.41 < 180$$

2  $\Delta$ s  $\Delta 2$

OR  $B = 131.41^\circ$

$$C = 180 - 161.41 = 18.59$$

$$\frac{\sin 18.59}{c} = \frac{\sin 30}{10}$$

$$c = \frac{10 \sin 18.59}{\sin 30}$$

$$c = 6.38$$

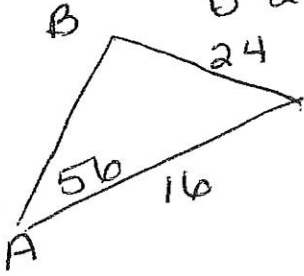
$$\frac{\sin 101.41}{c} = \frac{\sin 30}{10}$$

$$c = \frac{10 \sin 101.41}{\sin 30} = 19.6$$

$\Delta 1$

4.  $A = 56$  degrees,  $a = 24$ ,  $b = 16$

$B \approx 33.6^\circ$      $C \approx 90.4^\circ$      $c = 28.9$



$$\frac{\sin 56}{24} = \frac{\sin B}{16}$$

$$\sin B = \frac{16 \sin 56}{24}$$

$$\sin B = .5527$$

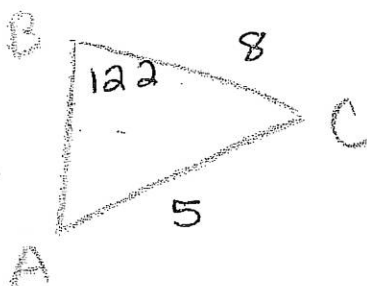
$$\sin^{-1} .5527 \approx \boxed{33.6^\circ}$$

check.  
 $180 - 33.6$   
 $= 146.4$

+ 56  
202.4!  
one Δ

5.  $B = 122$  degrees,  $b = 5$ ,  $a = 8$

no solution



$$\frac{\sin 122}{5} = \frac{\sin A}{8}$$

$$\sin A = \frac{8 \sin 122}{5}$$

$$\sin A = \boxed{1.36}$$

$\sin \theta \geq 1$   
 $\rightarrow$  no sol.

6.  $A = 17$  degrees,  $a = 5.8$ ,  $b = 14.7$

$B = 46^\circ$

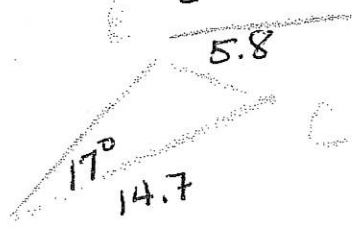
$C = 117^\circ$

2 Δs

OR  $B = 180 - 46 = 134$

+ 17  
 $151 \checkmark < 180$

$C = 180 - 151$   
 $= 29^\circ$



$$\frac{\sin 17}{5.8} = \frac{\sin B}{14.7}$$

$$\frac{14.7 \sin 17}{5.8} = \sin B$$

$$\sin B = .7410$$

$$\sin^{-1} .7410 = \boxed{47.8^\circ = B_1}$$

$$C = 180 - 47.8 - 17 = \boxed{115.2^\circ = C_1}$$

check  
 $180 - 47.8 = \boxed{132.2^\circ = B_2}$   
 $+ 17$   
 $149.2$  ☺  
2 Δs!

$C_2 = 180$   
 $- 149.2$   
 $C_2 = \boxed{30.8}$