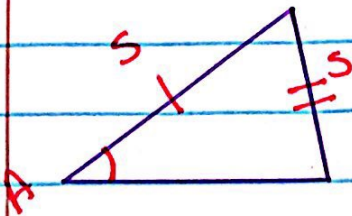


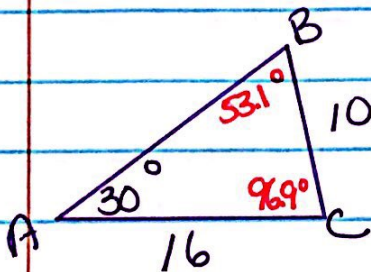
# Ambiguous Case

- Occurs when given 2 sides and a non-included  $\angle$ .



ASS - look for 2  $\Delta$ 's

1)  $a = 10$   $b = 16$   $m\angle A = 30^\circ$



$m\angle A = 30^\circ$   $a = 10$

\*  $m\angle B = 53.1^\circ; 126.9^\circ$   $b = 16$

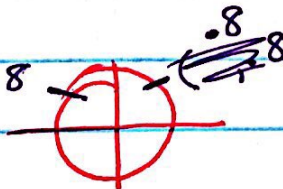
$m\angle C = 96.9^\circ; 23.1^\circ$   $c = 19.9; 7.8$

$$\frac{\sin 30^\circ}{10} = \frac{\sin B}{16}$$

$\sin B = .8$

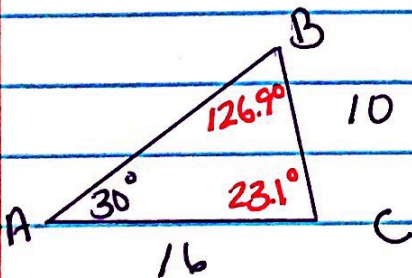
$B = 53.1^\circ$  acute

$180 - 53.1^\circ = 126.9^\circ$  obtuse



$$\frac{\sin 30^\circ}{10} = \frac{\sin 96.9^\circ}{c}$$

$c = 19.9$

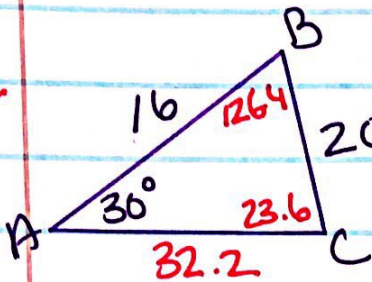


$$\frac{\sin 30^\circ}{10} = \frac{\sin 23.1^\circ}{c}$$

$c = 7.8$

2)  $a=20$   $c=16$   $m\angle A=30^\circ$

ASS



$m\angle A = 30^\circ$   
 $m\angle B = 126.4^\circ$   
 $m\angle C = 23.6^\circ$

$a = 20$   
 $b = 32.2$   
 $c = 16$

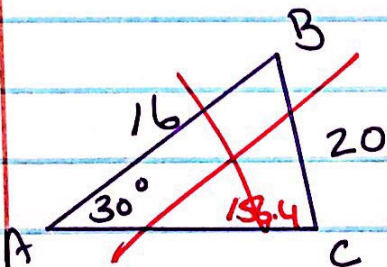
$$\frac{\sin 30^\circ}{20} = \frac{\sin C}{16}$$

$$\frac{\sin 30^\circ}{20} = \frac{\sin 126.4^\circ}{b}$$

$C = 23.6^\circ$  acute

$b = 32.2$

obuse  $180 - 23.6 = 156.4$



$30 + 156.4 > 180$

1  $\Delta$

Error  $\rightarrow$  No  $\Delta$