


1.) Explain the condition that must exist in order for a problem to have no triangles, one unique triangle, or two triangles.

SSA  one side and the \angle across from the side and any other side

2.) Explain how you determine if the given problem has two triangles.

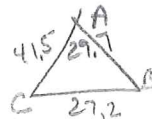
When given ASS

After finding the first angle, using law of sines, subtract that angle

from $180^\circ \rightarrow$ if another triangle can be made with the second angle -
2 triangles exist

Solve each triangle. If necessary, round answers to the nearest hundredths.

3.) $A = 29.7^\circ$ $a = 27.2$ $b = 41.5$



$$\frac{27.2}{\sin 29.7} = \frac{41.5}{\sin B}$$

$$\sin B = .7559\dots$$

$$\angle B = 49.11^\circ$$

$$\angle C = 101.19^\circ$$

$$\angle B_2 = 130.89^\circ$$

$$\angle C_2 = 19.41^\circ$$

$\angle B = 49.11^\circ$	$\angle B_2 = 130.89^\circ$
$\angle C = 101.19^\circ$	$\angle C_2 = 19.41^\circ$
$c = 53.85$	$c_2 = 18.24$

$$\frac{27.2}{\sin 29.7} = \frac{c}{\sin 101.19}$$

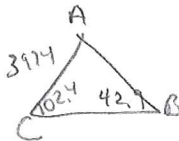
$$c = 53.85$$

$$\frac{27.2}{\sin 29.7} = \frac{c_2}{\sin 19.41}$$

$$c_2 = 18.24$$

AAS

4.) $B = 42.9^\circ$ $C = 102.4^\circ$ $b = 3974$



$$\frac{3974}{\sin 42.9} = \frac{c}{\sin 102.4}$$

$$c = 5701.74$$

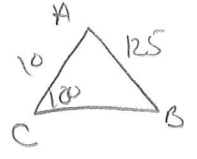
$$\frac{3974}{\sin 42.9} = \frac{a}{\sin 34.7}$$

$$a = 3323.41$$

$\angle A = 34.7^\circ$
$a = 3323.41$
$c = 5701.74$

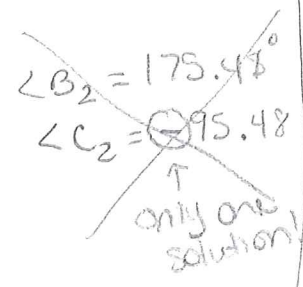
ASS!

5.) $C = 100^\circ$ $b = 10$ $c = 125$



$$\frac{125}{\sin 100} = \frac{10}{\sin B}$$

$$\sin B = .0787 \dots$$
$$\angle B = 4.52^\circ$$
$$\angle C = 75.48^\circ$$



$$\frac{125}{\sin 100} = \frac{a}{\sin 75.48}$$

$$a = 122.87$$

$\angle B = 4.52^\circ$
 $\angle C = 75.48^\circ$
 $a = 122.87$

AAS

6.) $B = 52^\circ$ $C = 29^\circ$ $a = 43$

$$\frac{43}{\sin 99} = \frac{b}{\sin 52}$$

$$b = 34.31$$

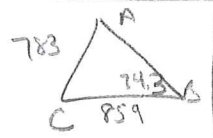
$$\frac{43}{\sin 99} = \frac{c}{\sin 29}$$

$$c = 21.11$$

$\angle A = 99^\circ$
 $b = 34.31$
 $c = 21.11$

SSA!

7.) $B = 74.3^\circ$ $a = 859$ $b = 783$



$$\frac{783}{\sin 74.3} = \frac{859}{\sin A}$$

$$\sin A = 1.056 \dots$$

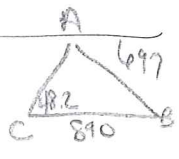
A = error

$\angle A =$
 $\angle C =$
 $c =$

no solution

ASS!

8.) $C = 48.2^\circ$ $a = 890$ $c = 697$



$$\frac{697}{\sin 48.2} = \frac{890}{\sin A}$$

$$\sin A = .95189 \dots$$

$$\angle A = 72.16^\circ$$

$$\angle B = 59.62^\circ$$

$$\angle A_2 = 107.84^\circ$$

$$\angle B_2 = 23.96^\circ$$

$$\frac{697}{\sin 48.2} = \frac{b}{\sin 59.62}$$

$$b = 806.59$$

$$\frac{697}{\sin 48.2} = \frac{b_2}{\sin 23.96}$$

$$b_2 = 379.49$$

$\angle A = 72.16^\circ$ $\angle A_2 = 107.84^\circ$
 $\angle B = 59.62^\circ$ $\angle B_2 = 23.96^\circ$
 $b = 806.59$ $b_2 = 379.69$