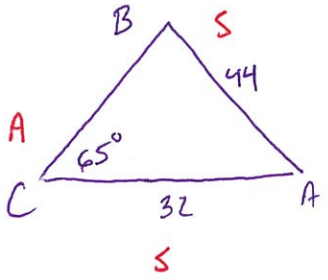
Name: Key

Law of Sine!

Sketch a triangle given the information. Then decide whether the given measurement can form exactly one triangle, two or no triangle.

1) $C = 65°$, $c = 44$, $b = 32$



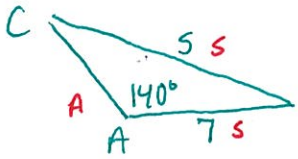
$\frac{\sin 65°}{44} = \frac{\sin B}{32}$

$\angle B = 41.2°$

$180 - 41.2° = 138.8°$

1 Triangle

2) $A = 140°$, $a = 5$, $c = 7$

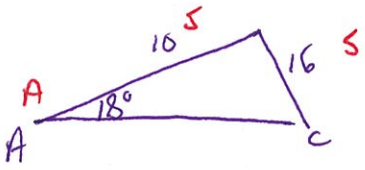


From the picture you can tell no triangle!

$\frac{\sin 140°}{5} = \frac{\sin C}{7}$

$\angle C = 64.1°$ not possible

3) $A = 18°$, $a = 16$, $c = 10$



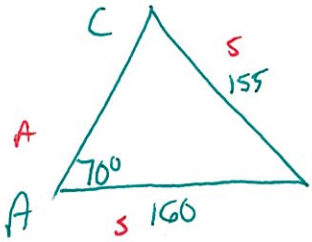
$\frac{\sin 18°}{16} = \frac{\sin C}{10}$

$\angle C = 11.1°$

~~168.9°~~

1 Triangle

4) $A = 70°$, $a = 155$, $c = 160$



$\frac{\sin 70}{155} = \frac{\sin C}{160}$

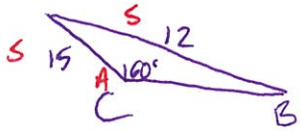
$\angle C = 75.9°$

OR

$= 104.1°$

2 Triangles!

5) $C = 160°$, $c = 12$, $b = 15$

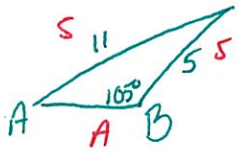


From the picture you can determine not a triangle

$\frac{\sin 160°}{12} = \frac{\sin B}{15}$

$\angle B = 25.3°$ not possible

6) $B = 105°$, $b = 11$, $a = 5$



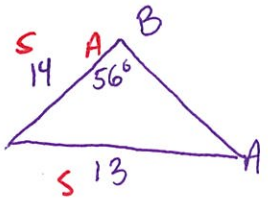
$\frac{\sin 105}{11} = \frac{\sin A}{5}$

$\angle A = 26°$

or ~~154°~~

1 triangle

7) $B = 56°$, $b = 13$, $a = 14$



$\frac{\sin 56°}{13} = \frac{\sin A}{14}$

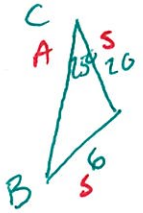
$\angle A = 63.2°$

or

$116.8°$

2 Triangles!

8) $C = 25°$, $c = 6$, $b = 20$



$\frac{\sin 25°}{6} = \frac{\sin B}{20}$

not possible!