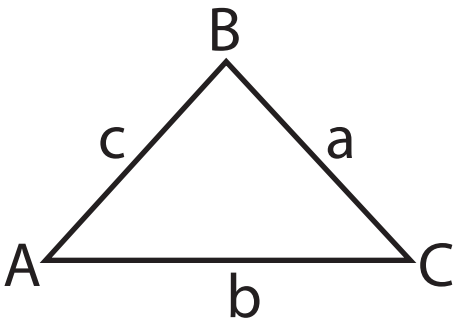
LAW OF SINES

$$\frac{a}{\text{Sin } A} = \frac{b}{\text{Sin } B} = \frac{c}{\text{Sin } C}$$



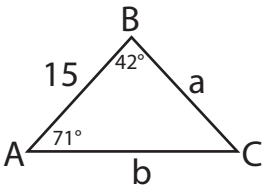
Steps for Solving Oblique Triangles:

1. Draw a triangle and label using the given data
2. Pick your formula (Law of Sines or Cosines) by determining the type of congruency in the given triangle
   (a) ASA or AAS use Law of Sines
   (b) SSA use Law of Sines Ambiguous case
   (c) SAS or SSS use Law of Cosines
3. Solve for all unknown parts. Remember, the sum of interior angles in a triangle is 180°

Examples: Solve △ ABC

1. A = 71°, B = 42°, C = 15

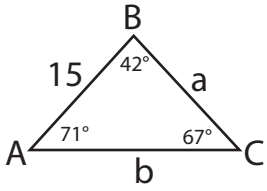
(1.)



(2.) ASA = Law of Sines

(3.) A+B+C = 180°
71° + 42° + C = 180°

C = 67°



$\frac{a}{\text{Sin}71°} = \frac{15}{\text{Sin}67°}$

$a = \frac{15(\sin 71°)}{\text{Sin}67°}$

a = 15.4

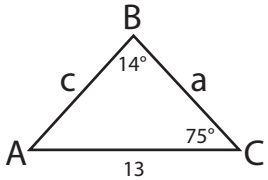
$\frac{b}{\text{Sin}42°} = \frac{15}{\text{Sin}67°}$

$b = \frac{15(\sin 42°)}{\text{Sin}67°}$

b = 10.9

2. B = 41°, C = 75°, b = 13

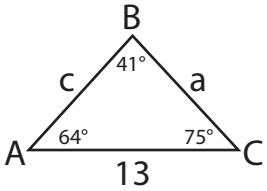
(1.)



(2.) AAS = Law of Sines

(3.) A + B + C = 180°
A + 41° + 75° = 180°

A = 64°



$\frac{a}{\text{Sin}64°} = \frac{13}{\text{Sin}41°}$

$a = \frac{13(\sin 64°)}{\text{Sin}41°}$

a = 17.8

$\frac{c}{\text{Sin}75°} = \frac{13}{\text{Sin}41°}$

$c = \frac{13(\sin 75°)}{\text{Sin}41°}$

c = 19.1