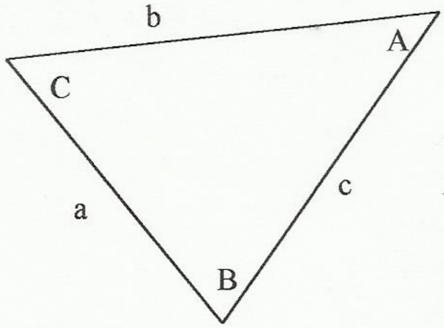
The Law of Sines:

The Law of Sines can be used to solve triangles that are not right triangles.
The ratio of the length of any side of a triangle to the angle of the opposite side is a constant for a given triangle.

ΔABC is a triangle with *a*, *b*, and *c* representing the measures of the sides opposite the angles with measures *A*, *B*, and *C* respectively:

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



Solve ΔABC if A=33°, B=105°, and b=37.9.

$\boxed{\angle C} = 180-(33+105) = 42°$

side A:

$\frac{a}{\sin A} = \frac{b}{\sin B}$

$\frac{a}{\sin 33} = \frac{37.9}{\sin 105}$

$\frac{a \sin 105}{\sin 105} = \frac{37.9 \sin 33}{\sin 105}$

$a = \frac{37.9 \sin 33}{\sin 105}$ $\boxed{21.37}$

side C:

$\frac{c}{\sin 42} = \frac{37.9}{\sin 105}$

$\frac{c \sin 105}{\sin 105} = \frac{37.9 \sin 42}{\sin 105}$

$c = \frac{37.9 \sin 42}{\sin 105}$

$c = 26.25$

Solve ΔABC if b=12, A= 25°, and B=35°.

$\angle C = 180-(25+35) = 180-60 = \boxed{120}$

side A:

$\frac{a}{\sin 25} = \frac{12}{\sin 35}$

$\frac{a \sin 35}{\sin 35} = \frac{12 \sin 25}{\sin 35}$

$a = \frac{12 \sin 25}{\sin 35}$

$a = 8.84$

side C:

$\frac{c}{\sin 120} = \frac{12}{\sin 35}$

$\frac{c \sin 35}{\sin 35} = \frac{12 \sin 120}{\sin 35}$

$c = \frac{12 \sin 120}{\sin 35}$

$c = 18.12$

Solve ΔABC if A= 40°, C=70°, and a= 20.

Solve ΔABC if A=65°, B=50°, and c=12.

Solve ΔABC if B=100°, C=50°, and c= 30.

Solve ΔABC if a=8.2, B=24.8°, and C=61.3°