

Law of Sines and Cosines

These techniques are used to solve oblique triangles (triangles with no right angles)

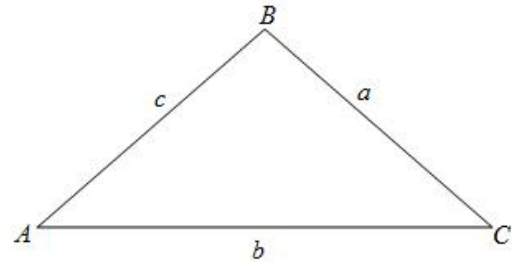
To solve an oblique triangle you need to know the measure of at least one side and any other two parts of the triangle- either two sides, two angles, or one angle and one side.

Law of Cosines

Used to solve triangles with the given information:

1. Three sides (SSS)
2. Two sides and their included angle (SAS)

For any triangle ABC , the following equations hold:



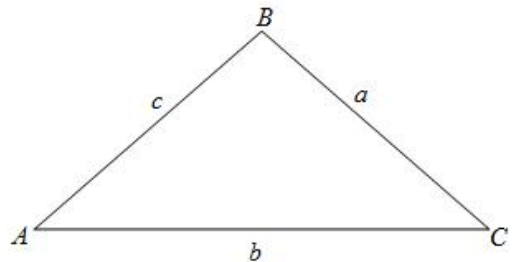
Standard Form	Alternative Form
$a^2 = b^2 + c^2 - 2bc \cos A$	$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$
$b^2 = a^2 + c^2 - 2ac \cos B$	$\cos B = \frac{a^2 + c^2 - b^2}{2ac}$
$c^2 = a^2 + b^2 - 2ab \cos C$	$\cos C = \frac{a^2 + b^2 - c^2}{2ab}$

Law of Sines

Used to solve triangles with the given information:

1. Two angles and any side (AAS and ASA)
2. Two sides and an angle opposite one of them (SSA)

For any triangle ABC , the following equations hold:



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