LAW OF COSINES

\[ a^2 = b^2 + c^2 - 2bc \cos A \]
\[ b^2 = c^2 + a^2 - 2ca \cos B \]
\[ c^2 = a^2 + b^2 - 2ab \cos C \]

When do you use this?

I. Given 2 sides and the included angle
II. Given all 3 sides

Another area formula for a triangle

Herone's Formula (Heron's Formula):

Area = \( \sqrt{s(s-a)(s-b)(s-c)} \)

where

\[ s = \frac{a+b+c}{2} \]  (semi perimeter)