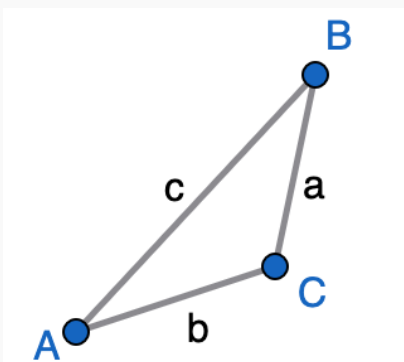


The Law of Cosines

THE LAW OF COSINES — write all three forms

The Law of Cosines — All Three Forms



Write all three forms. Circle what you need to know to use each one.

When a is the unknown:

$$a^2 = \underline{\hspace{2cm}}$$

When b is the unknown:

$$b^2 = \underline{\hspace{2cm}}$$

When c is the unknown:

$$c^2 = \underline{\hspace{2cm}}$$

To use it, I need:

THE PYTHAGOREAN THEOREM AS A SPECIAL CASE

The Pythagorean Theorem as a Special Case

Substitute $C = 90^\circ$ into the Law of Cosines $c^2 = a^2 + b^2 - 2ab \cdot \cos C$:

$$\cos(90^\circ) = \underline{\hspace{2cm}}$$

So the correction term $-2ab \cdot \cos C$ becomes: $\underline{\hspace{2cm}}$

The Law of Cosines becomes: $\underline{\hspace{2cm}}$

FINDING AN ANGLE — rearranged form

Finding an Angle — Rearranged Form

Starting from $a^2 = b^2 + c^2 - 2bc \cdot \cos A$,
rearrange to isolate $\cos A$

$$\cos A = \underline{\hspace{2cm}}$$

Then:

$$A = \cos^{-1}(\underline{\hspace{2cm}})$$

Use this when you know:

WHEN TO USE WHICH LAW

Configuration	Use
Two angles + one side	
Two sides + non-included $\angle$	
Two sides + included angle	
Three sides	