Law of Sines and Cosines Applications

Today's Standard

HSG.SRT.D11 - (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).

Cues	Notes
What is the Law of Sines?	Law of Sines: $a/\sin(A) = b/\sin(B) = c/\sin(C)$
What is the Law of Cosines?	Law of Cosines: $c^2 = a^2 + b^2 - 2ab*\cos(C)$
When to use each law?	Use Law of Sines when you know two angles and one side (AAS or ASA) or two sides and a non-included angle (SSA).
Examples of real-world applications	Use Law of Cosines when you know two sides and the included angle (SAS) or all three sides (SSS).
Common misconceptions	Applications include surveying, physics (resultant forces), navigation, and engineering.
	Misconception 1: Laws only apply to right triangles. Misconception 2: Confusion over which law to use.

Summary

The Law of Sines and the Law of Cosines are essential tools for solving triangles, both right and oblique. Understanding when and how to apply each law is crucial for tackling various real-world problems in fields like surveying, physics, and engineering.