

Solving non-right triangles

The Law of sines and cosines

1

You should know...

- Solving a triangle means finding all sides and angles.
- The Laws of Sines and Cosines work for all triangles – not just right triangles.

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The Law of cosines

use for **SAS** or **SSS**

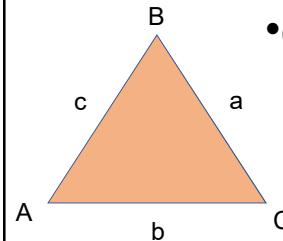
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Law of cosines

$$\bullet a^2 = b^2 + c^2 - 2bc\cos A$$

$$\bullet b^2 = a^2 + c^2 - 2ac\cos B$$

$$\bullet c^2 = a^2 + b^2 - 2ab\cos C$$



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Ex. 1: Find all the angles.

• $a = 8$ ft, $b = 19$ ft, and $c = 14$ ft

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Ex. 2: Find the missing measures.

• $A = 115^\circ$, $b = 15$ cm, and $c = 10$ cm

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