Selecting Strategies to Solve Problems in Trigonometry

So far we have explored Pythagorean theorem, SOH CAH TOA, the sine law and cosine law. Today we will look at deciding which tool to use and when.

It is possible to solve a triangle if you have 3 pieces of information (provided you have at least one side).

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When working with a triangle try the following steps:

1) Is this a right triangle? **If yes use Pythagorean theorem or SOH CAH TOA.**

2) Are you given 2 sides and the angle between them (SAS)? **If yes, then use Cosine law to find 3rd side.**

3) Are you given all 3 sides of the triangle? **If yes, use Cosine law to find any of the angles. (rearrangement required)**

4) Anything else (ASS, SAA) **use the Sine Law**.

Other helpful tips:

- Three interior angles of a triangle always sum to 180°.
- The longest side in a triangle always opposite the largest angle (good to know when checking "reasonableness" of final answers.

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Examples – Find the indicated measurement.

B

a

56°

43°

A   38 *cm*   C

15.6 m

x

39º

45 cm

66°   29°

←—— x ——→
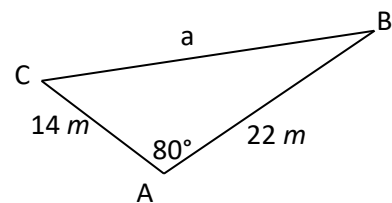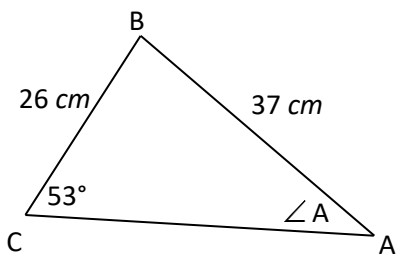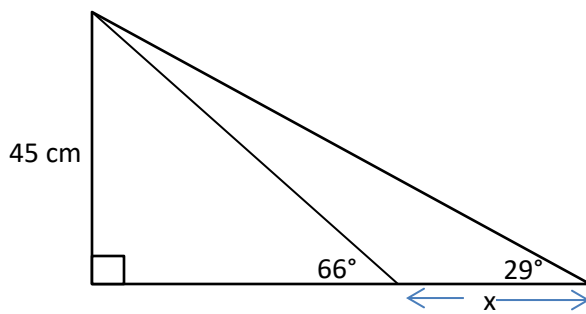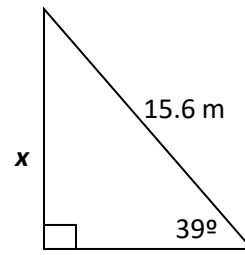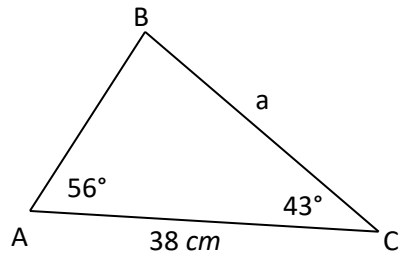
1. Text page 219 #1, 2, 3abc and page 224 #5, 6
2. Find the unknown length, *x,* in the diagram below.

34°

9.5m

x

86°   57°

8 m