Date:

Objective:

Starter: (Round answers to the nearest tenth.)

1. Use law of Sines to find $m\angle B$

A

20 in   22 in

C 45° B
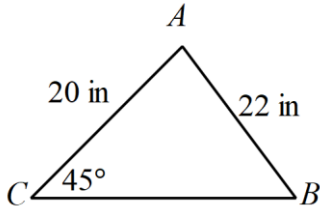
2. Solve for x.

$$5 = 4 + 10 - 9x$$

3. Solve for *x*.

$$10 = 8 + 9 - 3x$$

4. Solve for *x*.

$$12^2 = 3^2 + 5^2 - 2(3)(5)x$$

A. Law of Cosines

B
c
A a
b
C
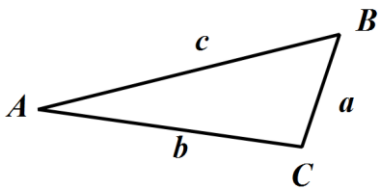
★ When do you use Law of Cosines?
-
-

Law of Cosines:
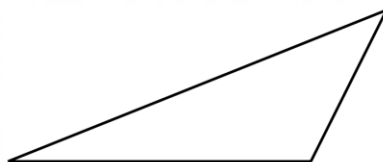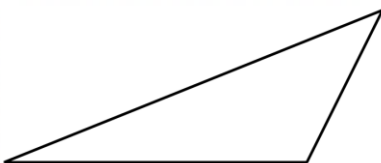Solve for the *largest* side or angle first.

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

or

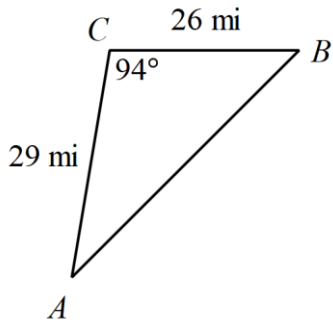$$b^2 = a^2 + c^2 - 2ac\cos B$$

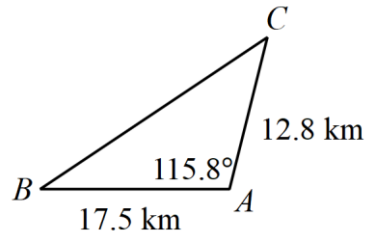*or*

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

Examples: Find each measurement indicated. Round your answers to the nearest tenth.
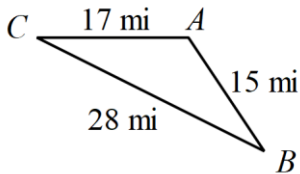
5. Find AB

6. Find BC
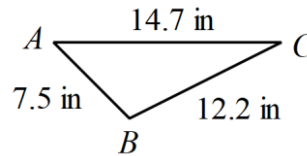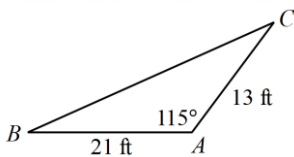
7. Find $m\angle A$

8. Find $m\angle B$

Examples: Solve each triangle. Round your answers to the nearest tenth.

1.

$m\angle A = $ _____ $a = $ _____

$m\angle B = $ _____ $b = $ _____

$m\angle C = $ _____ $c = $ _____

2. $a = 17.3$ m, $b = 11.1$ m, $c = 20.3$ m

$m\angle A = $ _____ $a = $ _____

$m\angle B = $ _____ $b = $ _____

$m\angle C = $ _____ $c = $ _____

One side of a ravine is 18 feet long. The other side is 13 feet long. A 24 foot zipline runs from the top of one side of the ravine to the other. To the nearest tenth, at what angle do the sides of the ravine meet?