Date:

Objective:

Starter: (Round answers to the nearest tenth.)

1. Find the length of the hypotenuse.

X

7 mi

$26°$

Z
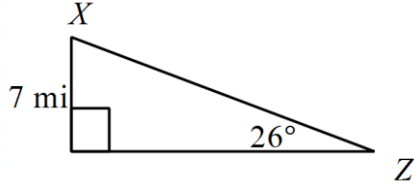
2. Find the measure of the angle A.

C

7

B

12

A
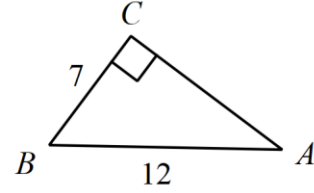
3. Solve for x.
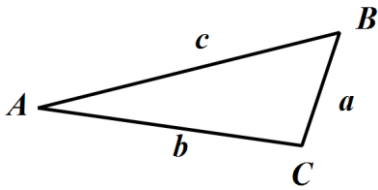
$$\frac{x}{8} = \frac{3}{7}$$

4. Solve for x.

$$\frac{2}{6} = \frac{3}{x+7}$$

A. Law of Sines –
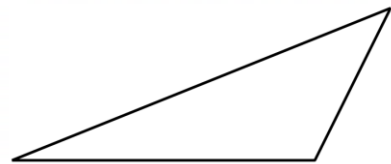
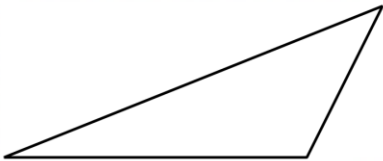   ****Use when you have ASA, AAS, or SSA**

B

c

A

a

b

C

Law of sines:

$$\frac{a}{\sin A} = \frac{b}{\text{Sin } B} = \frac{c}{\text{Sin } C}$$
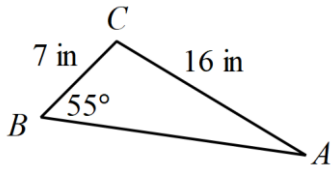
or

$$\frac{\text{Sin } A}{a} = \frac{\text{Sin } B}{b} = \frac{\text{Sin } C}{c}$$
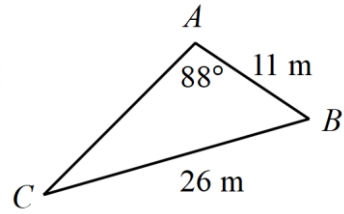
Examples: Find each measurement indicated. Round your answers to the nearest tenth.
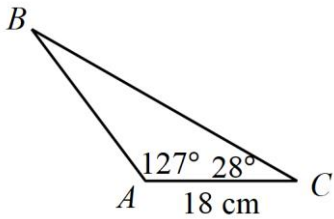
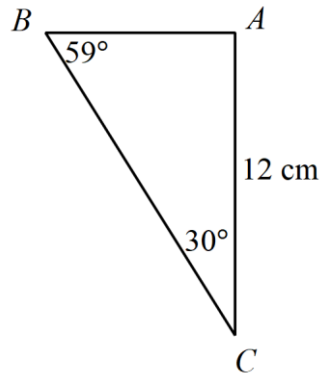1. Find $m\angle A$

2. Find $m\angle C$
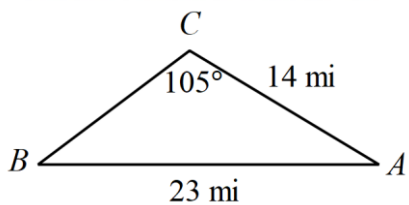

3. Find BC

4. Find AB

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

5.

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

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

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

6.

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

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

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

7. $m\angle B = 61°, m\angle C = 108°, a = 5$ yd
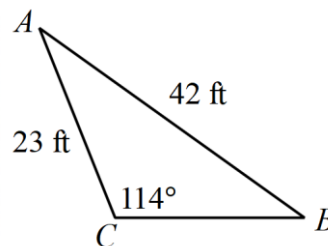
$m\angle A =$ _____ $a =$ _____

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

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

8. $m\angle C = 36°, b = 19$ m, $c = 20$ m
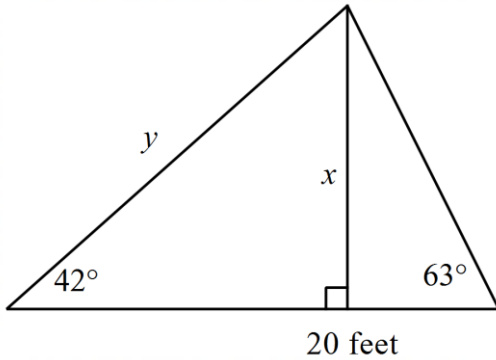
$m\angle A =$ _____ $a =$ _____

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

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

Find the missing side lengths. Round to the nearest tenth.

9.

A triangle with a vertical line (x) from the top vertex down to the base, forming a right angle with the base. The base is labeled 20 feet. The left bottom angle is 42°, the right bottom angle is 63°. The left slanted side is labeled y. The interior vertical segment is labeled x.

Draw a diagram for the situation and put in all of the information you can. Then figure out how to answer the question. REMEMBER that answers have to have UNITS.

10. You need to build a bridge across a canyon. To find the distance AB across the canyon you measure 100 feet along the side of the canyon from Point A to Point C. $\angle A = 88°$ and $\angle C = 72°$. To the nearest foot, how long will the bridge be?

11. Two fire-lookout stations are 18 miles apart, with station B directly west of station A. Both stations spot a fire. The bearing of the fire from station A is S 32° W and the bearing of the fire from station B is S 55°E. How far, to the nearest tenth of a mile, is the fire from each lookout station?