LAW OF COSINES WORKSHEET
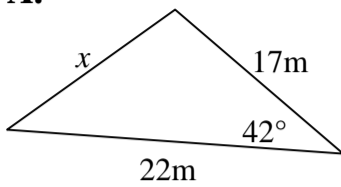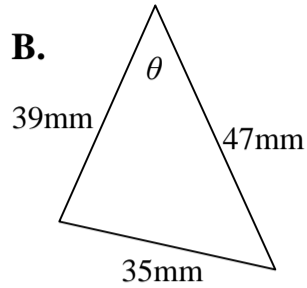
1. Solve for the unknown in each triangle. Round to the nearest hundredth.
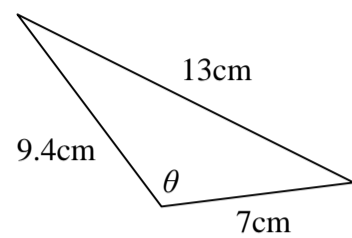
A.

x, 17m, 42°, 22m

B.

θ, 39mm, 47mm, 35mm

C.

13cm, 9.4cm, θ, 7cm

D.

23m, x, 47°, 20m

E.

55cm, 61°, x, 50cm

F.

4.9m, 9.1m, 8.3m, θ

2. Solve for **all** missing sides and angles in each triangle. Round to the nearest hundredth. ** USE PROPER VARIABLES

A. ΔXYZ : $x = 29m,\ y = 15m,\ \angle Z = 122°$

B. ΔGHI : $g = 13cm, h = 8cm, i = 15cm$

C. ΔMNO : $n = 31m, o = 28m, \angle M = 62°$

3. A triangle has sides equal to 4 m, 11 m and 8 m. Find its angles (round answers to nearest tenth)

4. A ship leaves port at 1 pm traveling north at the speed of 30 miles/hour. At 3 pm, the ship adjusts its course on a bearing of N 20º E. How far is the ship from the port at 4pm? (round to the nearest unit).

5. Find the area of the triangle whose sides are 12cm., 5cm. and 13cm.

1. Solve for the unknown in each triangle. Round to the nearest hundredth.

A.

x=**14.7** 17m
42°
22m

B.

θ=**46.90º**
39mm 47mm
35mm

C.

13cm
9.4cm
θ=**103.91**
7cm

D.

23m
x=**17.37º**
47°
20m

E.
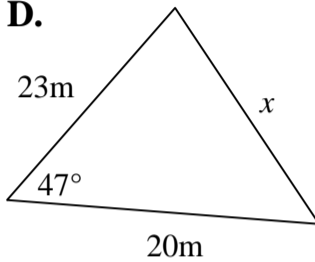
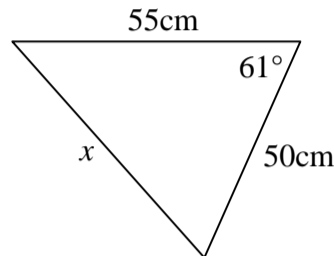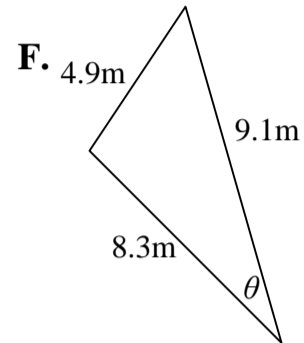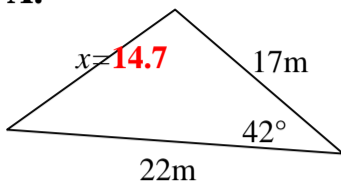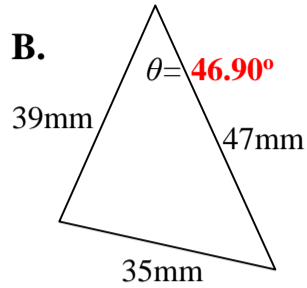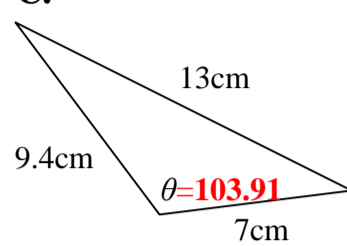55cm
61°
x=**53.47º** 50cm

F.

4.9m
9.1m
8.3m
θ=**32.30º**
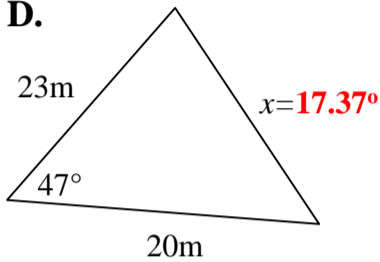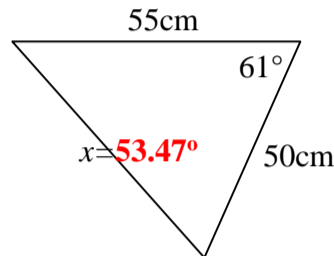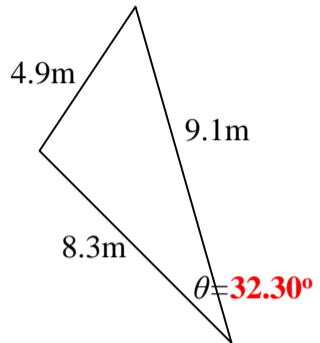
2. Solve for **all** missing sides and angles in each triangle. Round to the nearest hundredth. ** USE PROPER VARIABLES

A. $\triangle XYZ$: $x = 29m, y = 15m, \angle Z = 122°$
   z=39.08m   <X= 38.99º   <Y =19.01º

B. $\triangle GHI$: $g = 13cm, h = 8cm, i = 15cm$
   <G=60º   <H=32.20º   <I=87.80º

C. $\triangle MNO$: $n = 31m, o = 28m, \angle M = 62°$
   m=30.50   <N=63.83º   <O=54.16º

3. A triangle has sides equal to 4 m, 11 m and 8 m. Find its angles (round answers to nearest tenth)   **16.21º, 129.84º, 33.95º**

4. A ship leaves port at 1 pm traveling north at the speed of 30 miles/hour. At 3 pm, the ship adjusts its course on a bearing of N 20º E. How far is the ship from the port at 4pm? (round to the nearest unit).   **88.79 miles**

5. Find the area of the triangle whose sides are 12cm., 5cm. and 13cm.   **30.00 cm²**