Geometry Honors                                           Mathematician: _____
Unit 8: Similarity within Triangles                                      Period:_____
8.4a Law of Sines

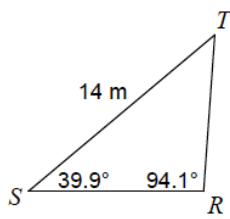# LEVEL: EMERGING

Directions: Find the indicated measure. Round all answers to three decimal places.
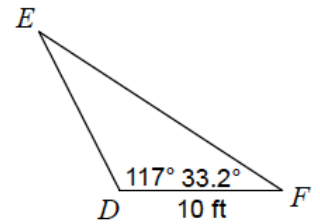
1)



14 m

39.9°   94.1°

$S$              $R$

$RT =$ _____

2)



29.8 in          43°

$Q$   19°

$P$

$PQ =$ _____

3)



$E$

117° 33.2°

$D$   10 ft   $F$

$EF =$ _____

4)



$R$

29 ft

128°

$Q$   12 ft   $P$

$m\angle R =$ _____

5)



$F$

18 in

116.1°

$E$   10 in   $D$

$m\angle F =$ _____

6)



$C$

78°   21 cm

$B$   28.4 cm   $A$
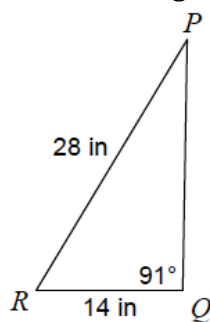
$m\angle B =$ _____
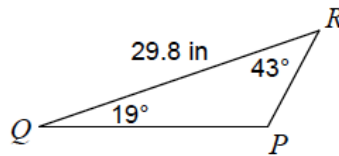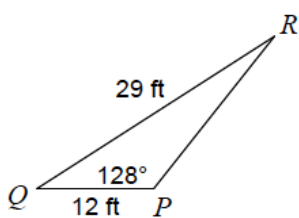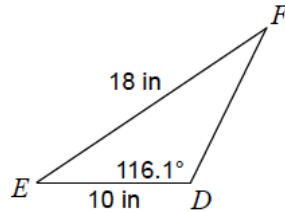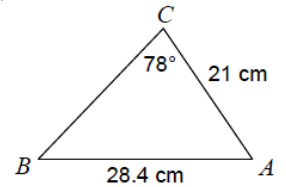
# LEVEL: PROFICIENT

Directions: Solve the following triangles. Round all answers to three decimal places.

7)



$P$

28 in

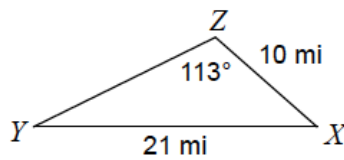91°

$R$   14 in   $Q$

$m\angle P =$ _____

$m\angle R =$ _____

$PQ =$ _____

8)



$Z$

113°   10 mi

$Y$

21 mi   $X$

$m\angle X =$ _____

$m\angle Y =$ _____

$YZ =$ _____

9)



$H$

87°   7 cm

51°

$K$   $P$

$m\angle P =$ _____

$PK =$ _____

$HK =$ _____
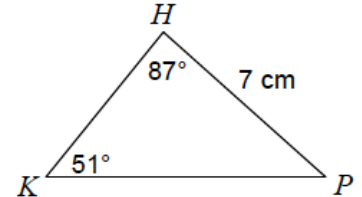
10) In $\Delta QRP$, $m\angle Q = 53°$,
$p = 10$ cm, $q = 12.8$ cm

$m\angle P =$ _____

$m\angle R =$ _____

$r =$ _____

11) In $\Delta ZXY$, $m\angle Z = 87°$,
$y = 20$ m, $z = 25$ m

$m\angle X =$ _____

$m\angle Y =$ _____

$x =$ _____

12) In $\Delta ABC$, $m\angle B = 63.9°$,
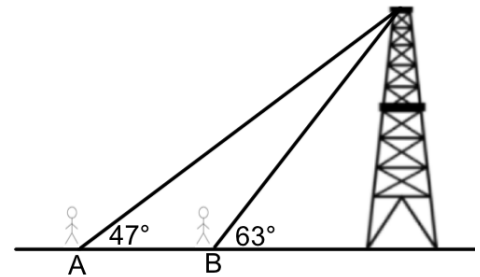$m\angle C = 21.1°$, $b = 30$ cm

$m\angle A =$ _____

$a =$ _____

$c =$ _____

**LEVEL: MASTERY**

13) Two construction workers, who are standing 100 feet apart, need to run a cable from the top of the tower to position A. Based on the diagram, how long does the cable need to be?



47°  63°
A    B

14) A forest firefighter spots smoke in the distance. He radios to the fire tower and tells them the tower forms a 53° with the fire, who know that the angle between the firefighter and fire is 74°. If the tower is 1200 m away from the firefighter and 900 m away from the fire, how far is the firefighter from the fire?



d
53°
1200 m
900 m
74°