Geometry Honors
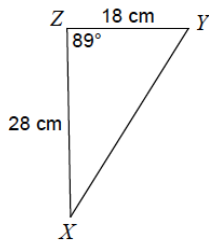Unit 8: Similarity within Triangles
8.4b Law of Cosines

Mathematician: _____

Period:_____

LEVEL: EMERGING

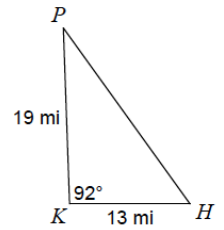Directions: Find the indicated measure. Round all answers to three decimal places.

1)

Z 18 cm Y
89°
28 cm
X

$XY =$ _____

2)

R
55°   29.2 km
22.9 km
Q P

$PQ =$ _____

3)

P
19 mi
92°
K 13 mi H

$HP =$ _____

4)

P
24 mi
15.8 mi
K 10.1 mi H

$m\angle K =$ _____

5)

Z 26.8 ft X
25 ft   24.7 ft
Y

$m\angle Z =$ _____

6)

P 8 m R
11 m
15 m
Q
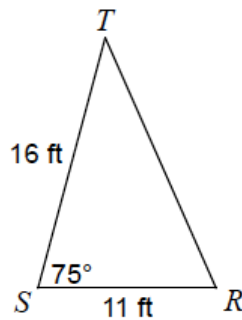
$m\angle P =$ _____
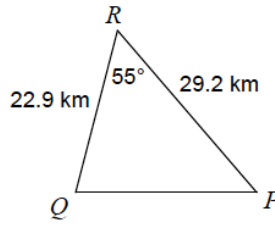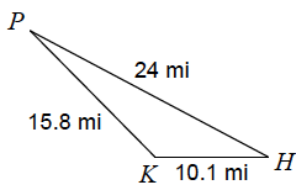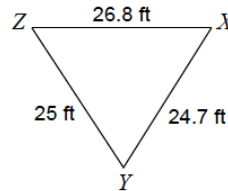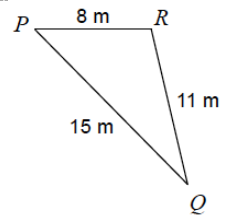
LEVEL: PROFICIENT

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

7)

T
16 ft
75°
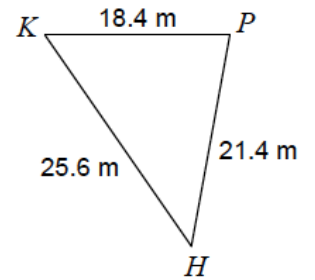S 11 ft R

$m\angle T =$ _____

$m\angle R =$ _____

$TR =$ _____

8)

K 18.4 m P
25.6 m   21.4 m
H

$m\angle H =$ _____

$m\angle P =$ _____

$m\angle K =$ _____

9) In $\triangle ABC$, $a = 26.5$ in, $b = 15.7$ in, and $c = 17.5$ in.

$m\angle A =$ _____

$m\angle B =$ _____

$m\angle C =$ _____

10) In $\triangle YZX$, $x = 28.6\ km$, $m\angle Y = 127.3°$, $z = 18.4$ km

$m\angle X =$ _____

$m\angle Z =$ _____

$y =$ _____

13) During a figure skating routine, Jackie and Peter skate apart with an angle of 15° between them. Jackie skates for 5 meters and Peter skates for 7 meters. How far apart are the skaters?
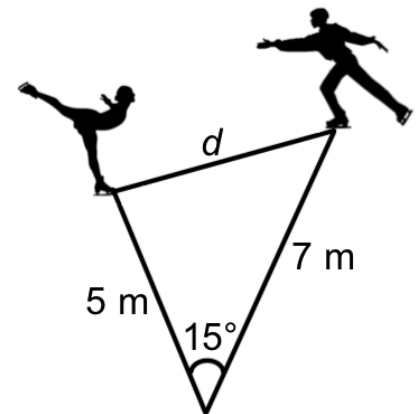
14) On a map, Orlando is 178 mm due south of Niagara Falls, Denver is 273 mm from Orlando, and Denver is 235 mm from Niagara Falls. Find the angle at Niagara Falls.