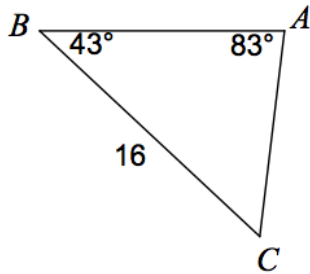


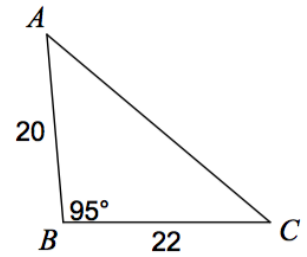
LEVEL: EMERGING

Directions: Find AC in each of the following triangles.

1)



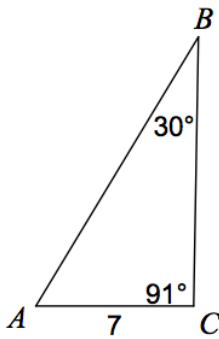
2)



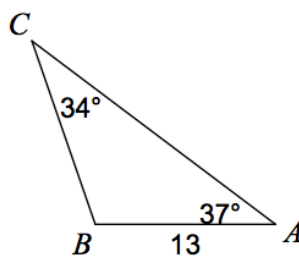
LEVEL: PROFICIENT

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

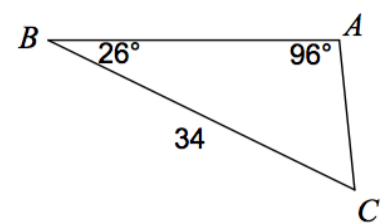
3)



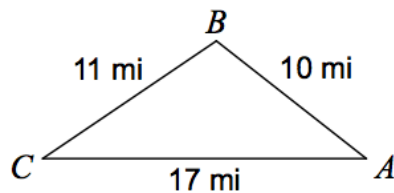
4)



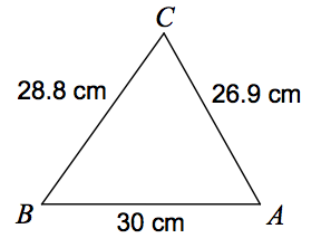
5)



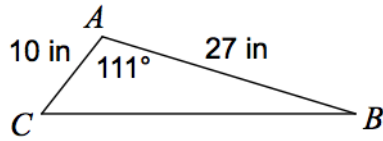
6)



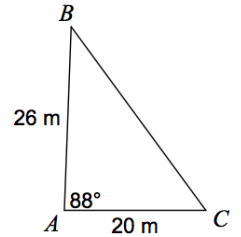
7)



8)



9)

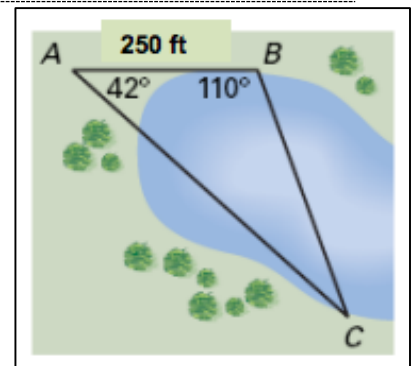
**LEVEL: MASTERY**

Directions: Draw a diagram to solve the following problems, and then answer the questions. Unless otherwise noted, round all answers to the nearest tenth.

10) In $\triangle XYZ$, $m\angle X = 18^\circ$, $z = 27$ ft, and $x = 16$ ft. Find all the possible lengths for the third side and the unknown angles.

11) In $\triangle DEF$, $m\angle D = 152^\circ$, $f = 34$ km, and $e = 47.8$ km. Find all the unknown angles and sides.

12) Matt is standing at point C and can see his campground at point A and the pier at point B at the angles given in the diagram. He knows the pier is 250 feet from the campground. To the nearest thousandth, how far away is he currently from the pier?



13) Two planes leave an airport at the same time. One plane is flying 650 mph at a bearing N 42° E (42° east of north) and the other plane is flying at 825 mph at a bearing of N 53° W (53° west of north). To the nearest hundredth, how far apart are the planes after flying for 2 hours?

