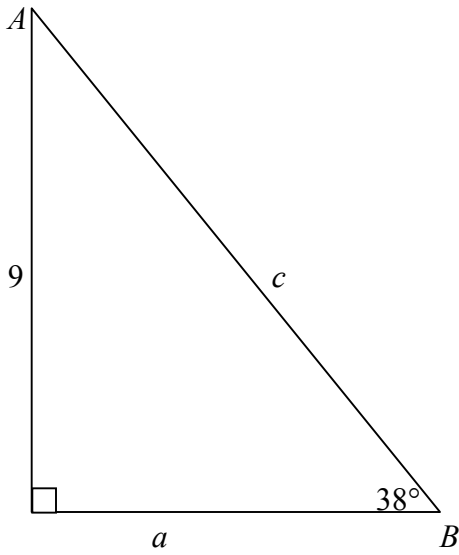


Applying Trig Functions, Law of Sines, & Law of Cosines

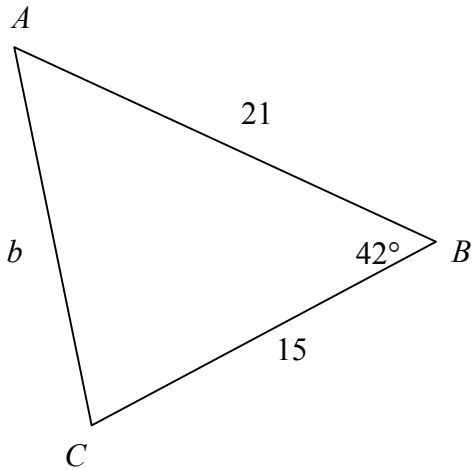
Show all your work

1) Find the missing sides and angles



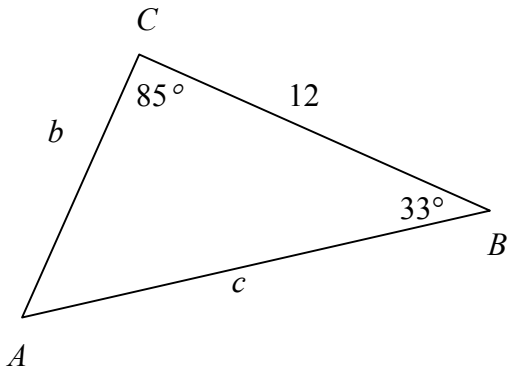
$A =$        $a =$        $c =$

2)



$A =$        $C =$        $b =$

3)



$A =$

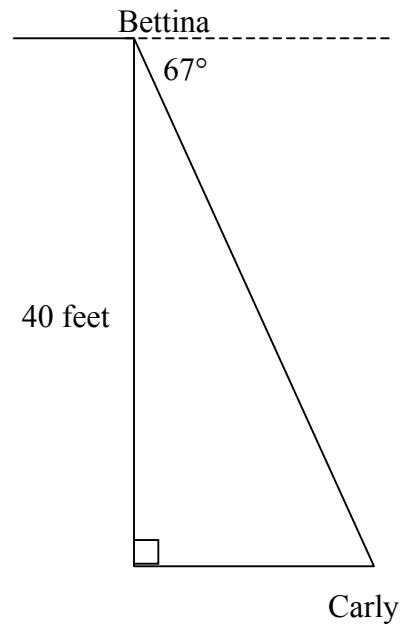
$b =$

$c =$

- 4) While Carly is sitting in the Piazza drinking a 5 hour energy drink to help her focus, Bettina is preparing to loft a water balloon from the roof of the building at her. If the angle of depression from Bettina to Carly is  $67^\circ$  and the roof is 40 feet high(see diagram below),

a) How far is Bettina from Carly?

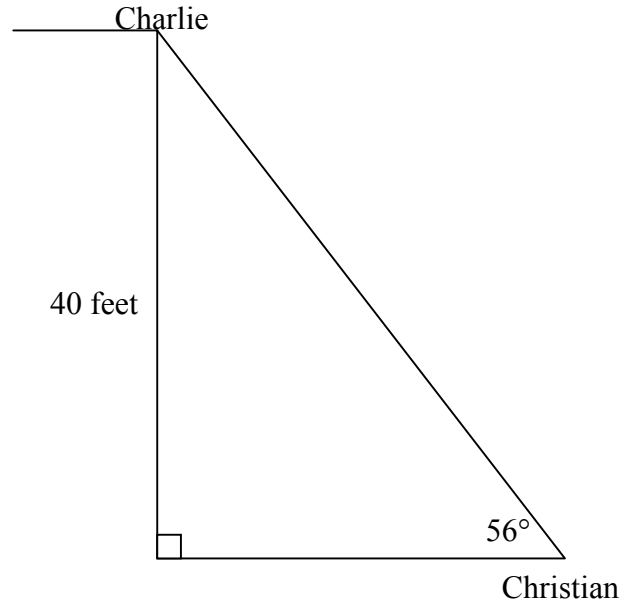
b) How far is Carly sitting from the school building?



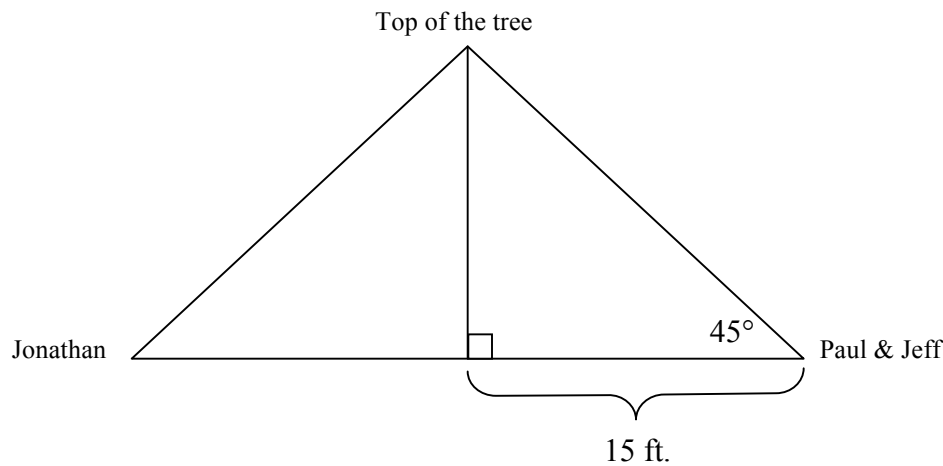
- 5) What Charlie doesn't know is that Christian is hiding around the corner with a Super Soaker ready to nail him when he steps out to the edge of the roof. Angelina stops and measures the angle of elevation from him to Charlie and finds that it is  $56^\circ$ .

a) How far is Christian from Charlie?

b) How far is Christian from the school building?



- 6) Paul and Jeff are across the Piazza with paint guns ready to nail Jonathan who is napping on a bench. While they are using one of the trees as cover, they realize that they have to aim above the tree. They determine the angle of elevation from them to the top of the tree to be  $45^\circ$  and that they are 15 feet from the tree.



a) How far are they from Jonathan?

b) How high is the tree?