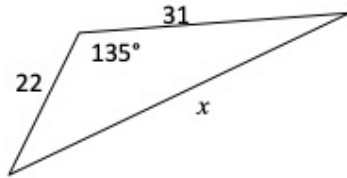
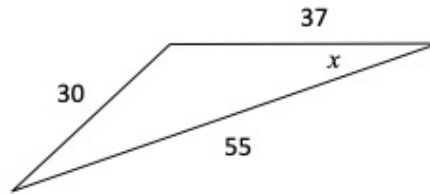


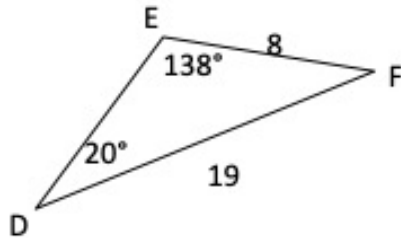
State whether the Law of Sines or Law of Cosines is the best choice to solve for  $x$  for the given figure. Substitute the values into the appropriate formula (do not solve).



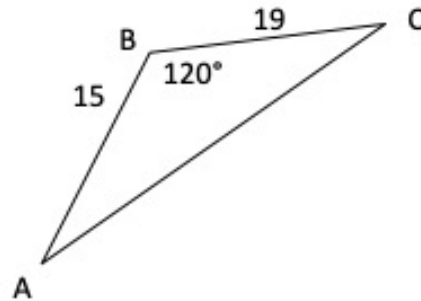
State whether the Law of Sines or Law of Cosines is the best choice to solve for  $x$  for the given figure. Substitute the values into the appropriate formula (do not solve).



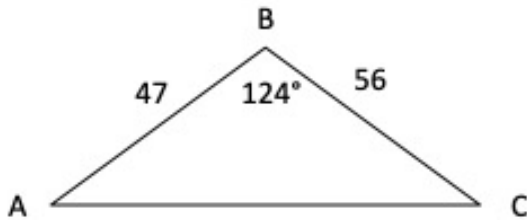
Find the missing dimensions of the triangle below



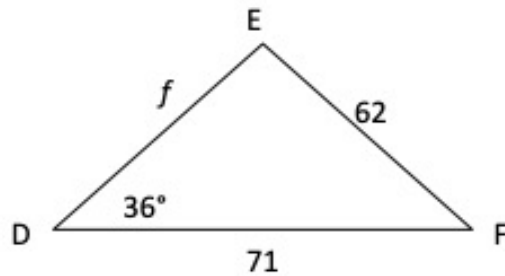
Find the  $m\angle C$



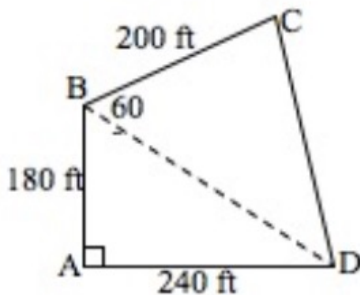
Find the missing dimensions of the triangle below.



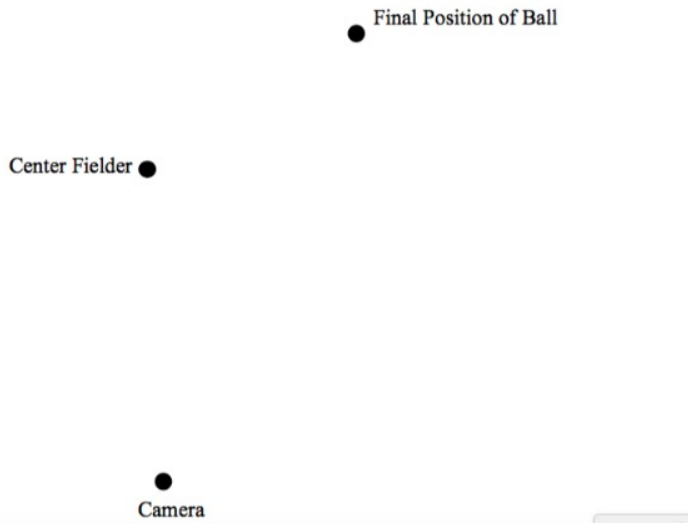
Find the  $f$



Find the **perimeter** and **area** of the quadrilateral below.



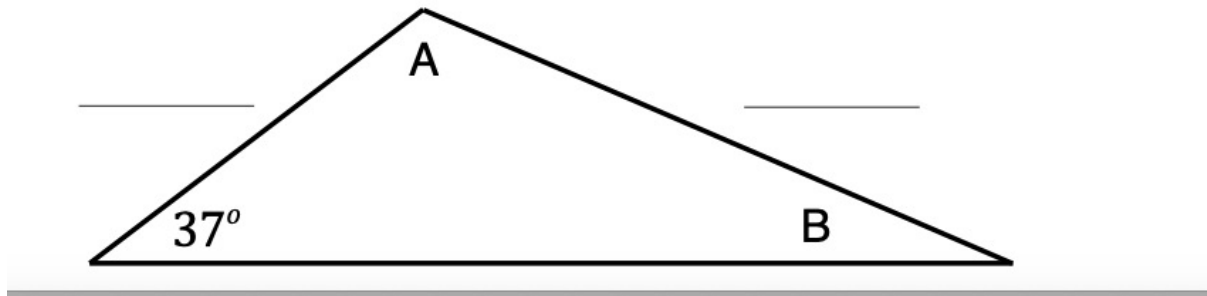
A baseball player in center field is playing approximately 330 feet from the television camera that is behind home plate. A batter hit a fly ball that goes to the wall that is 420 feet from the camera. Approximate the number of feet the center fielder had to run to make the catch if the camera turned  $9^\circ$  in the following play.



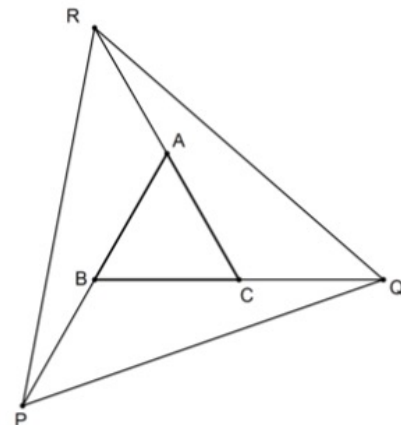
A poll tilts towards the sun at an  $8^\circ$  angle from the vertical at it casts a 22-ft shadow. The angle of elevation from the shadow to the top of the pole is  $43^\circ$ . How tall is the poll?



In the blank triangle below, give the sides values such that triangle could not possibly exist. Support your values by showing the Law of Sines will not work for your triangle.

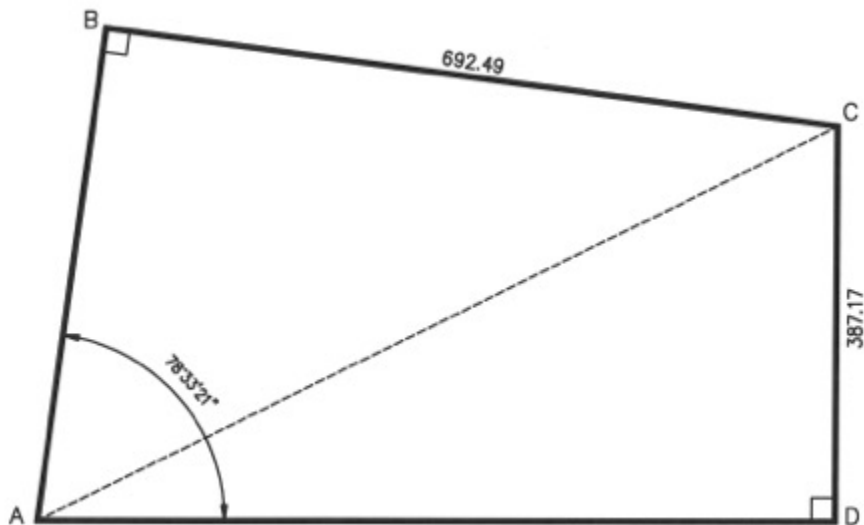
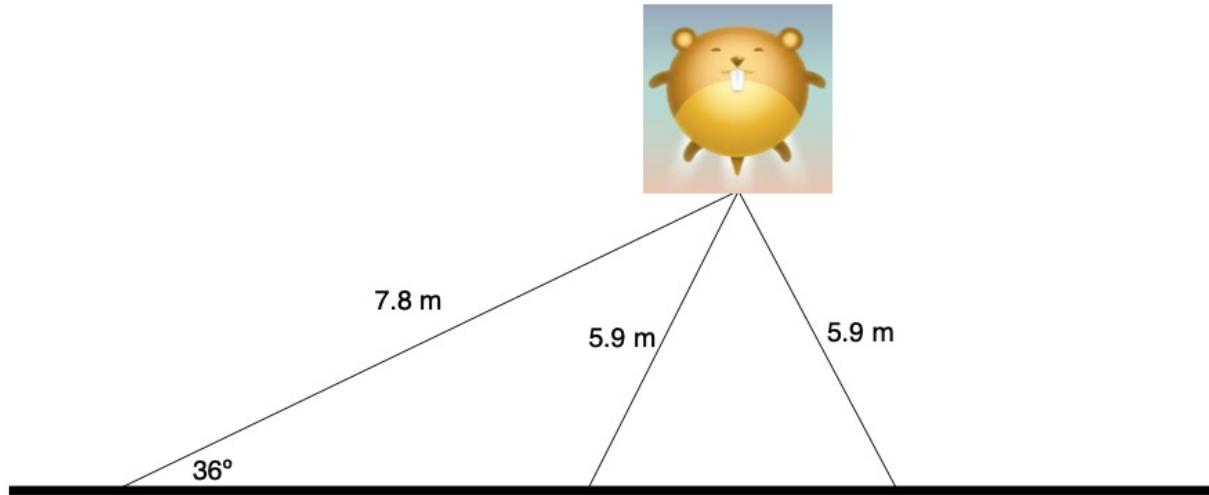


Suppose that  $ABC$  is an equilateral triangle with all sides of length 1 unit. We extend side  $AB$  by 1 unit beyond  $B$  to get  $P$ , we extend side  $BC$  by 1 unit beyond  $C$  to get  $Q$  and side  $AC$  beyond  $A$  to get  $R$ . Compute the length of the sides in triangle  $PQR$ .



Albert and Belle are part of a scientific team studying thunderclouds. The team is about to launch a weather balloon into an active part of the cloud. Albert's rope is 7.8 m long and makes an angle of  $36^\circ$  with the ground. Belle's rope is 5.9 m long.

- Is it necessary to consider the ambiguous case? Explain.
- Sketch all possible diagrams for this situation. (I GIVE THIS TO YOU. YOU'RE WELCOME.)
- Determine all possible the **distances** between Albert and Belle to the nearest tenth of a meter.



KNOWN: DISTANCE  $BC = 692.49$  DISTANCE  $CD = 387.17$   
 $\angle BAD = 78^\circ 33' 21''$

FIND: DISTANCE  $AB =$  \_\_\_\_\_  
 DISTANCE  $AD =$  \_\_\_\_\_  
 DISTANCE  $AC =$  \_\_\_\_\_

REQUIRED ANSWER FORMAT  
 DISTANCES: NEAREST HUNDREDTH