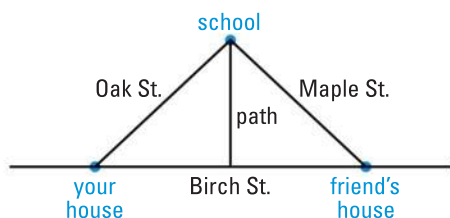


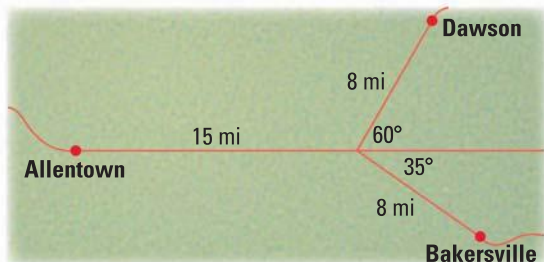


## Lessons 5.4–5.6

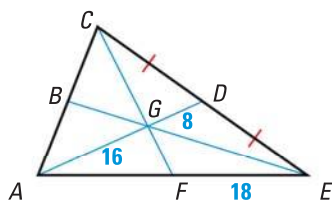
1. **MULTI-STEP PROBLEM** In the diagram below, the entrance to the path is halfway between your house and your friend's house.



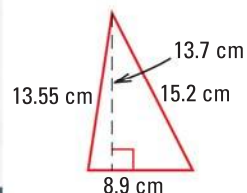
- Can you conclude that you and your friend live the same distance from the school if the path bisects the angle formed by Oak and Maple Streets?
  - Can you conclude that you and your friend live the same distance from the school if the path is perpendicular to Birch Street?
  - Your answers to parts (a) and (b) show that a triangle must be isosceles if which two special segments are equal in length?
2. **SHORT RESPONSE** The map shows your driving route from Allentown to Bakersville and from Allentown to Dawson. Which city, Bakersville or Dawson, is located closer to Allentown? *Explain* your reasoning.



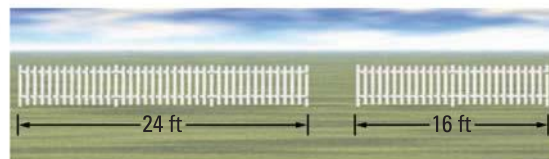
3. **GRIDDED RESPONSE** Find the length of  $\overline{AF}$ .



4. **SHORT RESPONSE** In the instructions for creating the terrarium shown, you are given a pattern for the pieces that form the roof. Does the diagram for the red triangle appear to be correct? *Explain* why or why not.



5. **EXTENDED RESPONSE** You want to create a triangular fenced pen for your dog. You have the two pieces of fencing shown, so you plan to move those to create two sides of the pen.



- Describe* the possible lengths for the third side of the pen.
  - The fencing is sold in 8 foot sections. If you use whole sections, what lengths of fencing are possible for the third side?
  - You want your dog to have a run within the pen that is at least 25 feet long. Which pen(s) could you use? *Explain*.
6. **OPEN-ENDED** In the gem shown, give a possible side length of  $\overline{DE}$  if  $m\angle EFD > 90^\circ$ ,  $DF = 0.4$  mm, and  $EF = 0.63$  mm.

