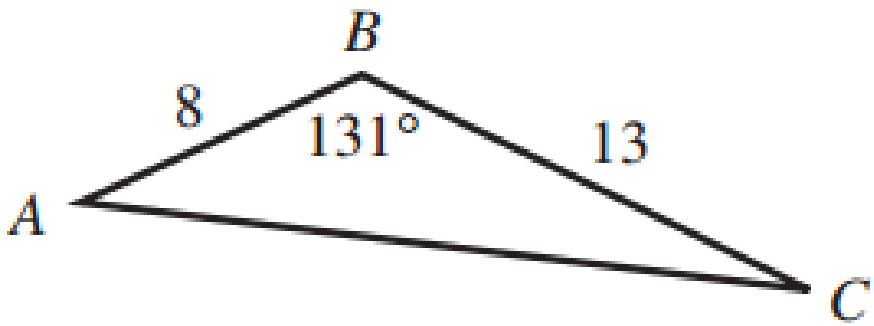
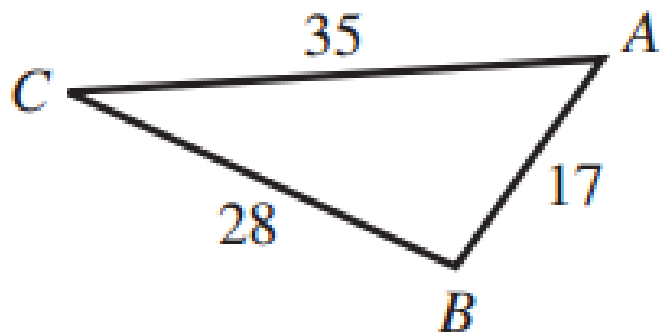
In Exercises 1–4, solve the triangle.

1.



4.



In Exercises 5–16, solve the triangle.

5. $A = 55°, \quad b = 12, \quad c = 7$

9. $a = 1, \quad b = 5, \quad c = 4$

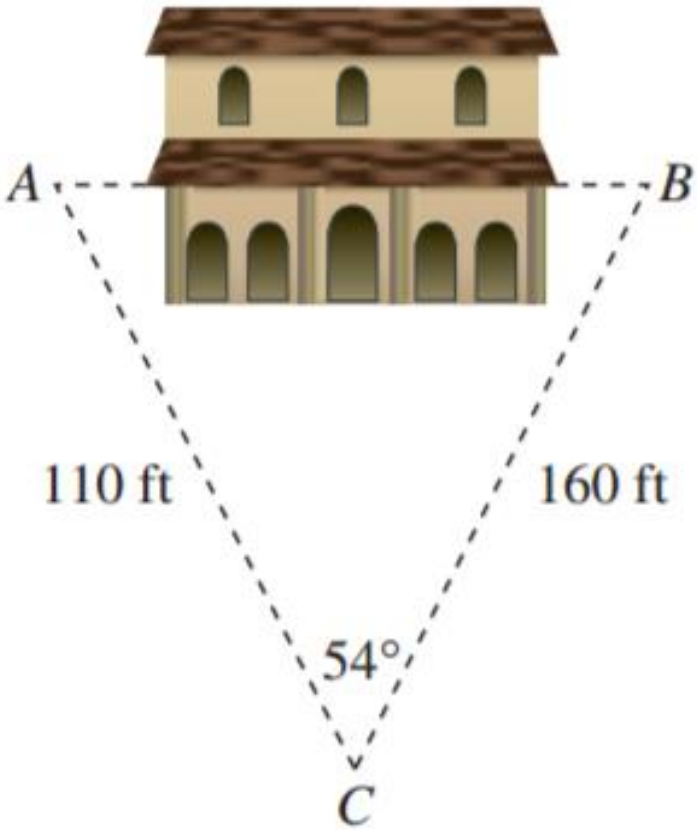
10. $a = 1, \quad b = 5, \quad c = 8$

29. Find the radian measure of the largest angle in the triangle with sides of 4, 5, and 6.

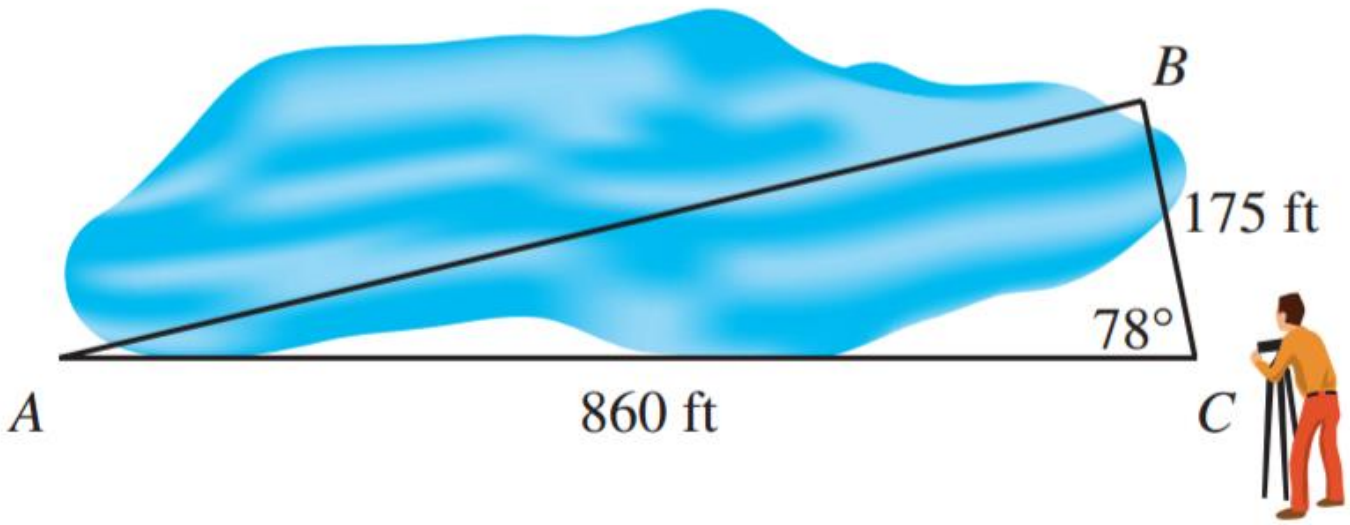
31. Find the area of a regular hexagon inscribed in a circle of radius 12 inches.

35. Measuring Distance Indirectly

Juan wants to find the distance between two points A and B on opposite sides of a building. He locates a point C that is 110 ft from A and 160 ft from B, as illustrated in the figure. If the angle at C is 54°, find distance AB.



38. Surveyor's Calculations Tony must find the distance from A to B on opposite sides of a lake. He locates a point C that is 860 ft from A and 175 ft from B. He measures the angle at C to be 78°. Find distance AB.

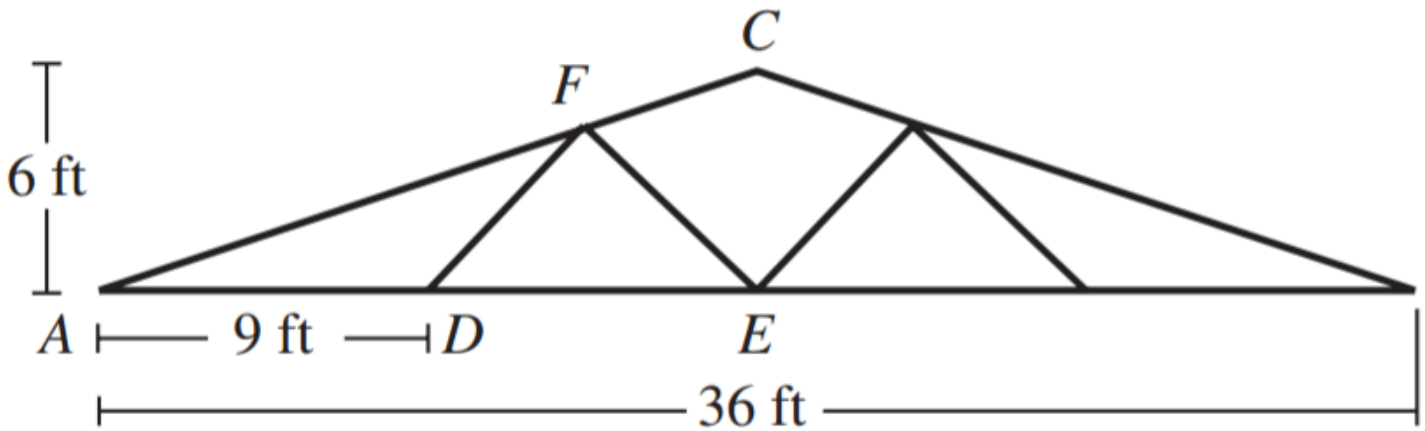


39. Construction Engineering A manufacturer is designing the roof truss that is modeled in the figure shown.

(a) Find the measure of $\angle CAE$.

(b) If $AF = 12$ ft, find the length DF.

(c) Find the length EF.

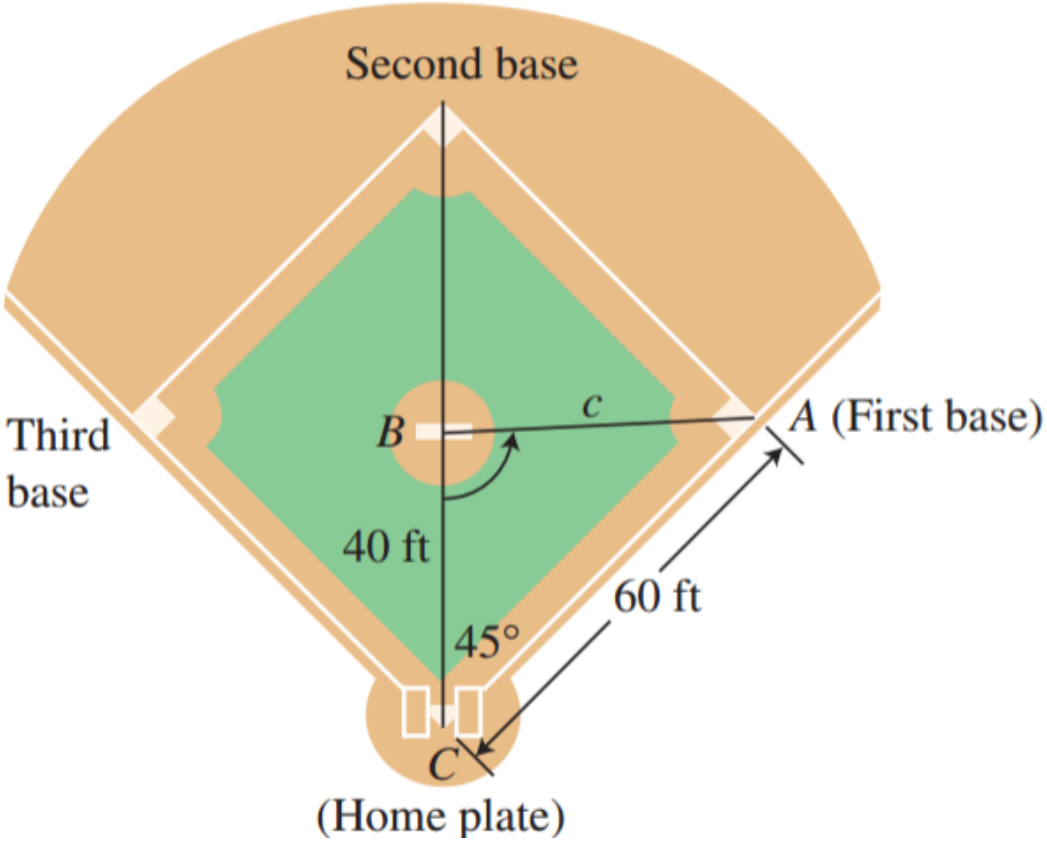


37. Designing a Softball Field In softball, adjacent bases are 60 ft apart. The distance from the center of the front edge of the pitcher's rubber to the far corner of home plate is 40 ft.

(a) Find the distance from the center of the pitcher's rubber to the far corner of first base.

(b) Find the distance from the center of the pitcher's rubber to the far corner of second base.

(c) Find $\angle B$ in $\triangle ABC$.



41. Football Kick The player waiting to receive a kickoff stands at the 5 yard line (point A) as the ball is being kicked 65 yd up the field from the opponent's 30 yard line. The kicked ball travels 73 yd at an angle of 8° to the right of the receiver, as shown in the figure (point B). Find the distance the receiver runs to catch the ball.