

Trigonometry

Solving Triangles: The Law of Cosines - Homework

In each of the following problems, you are given three measures for a triangle. The angle and side labels are based on the figure below, although the figure is not to scale. In each problem, find the other three measures of that triangle.

1) Given: $A = 130^\circ$, $c = 9$, $b = 12$

2) Given: $B = 75^\circ$, $a = 20$, $c = 18$

3) Given: $a = 6$, $b = 8$, $c = 12$

4) Given: $a = 10$, $b = 15$, $C = 45^\circ$

5) Given: $a = 30$, $b = 60$, $a = 50$

6) Two trusses have lengths of 3 feet and 5 feet and meet at a 52° angle. Find the length of the span on the rafter supported by the trusses?

7) A triangular parcel of land has 375 ft of frontage, the other two sides have lengths of 250 ft and 300 ft. What angle does the frontage make with each of the other two boundaries?

8) A baseball diamond is a square with sides 90 ft long and the pitcher's mound is 60 ft from home plate.

a) How far is it from the pitcher's mound to third base?

b) When a runner is halfway from second to third, how far is he from the pitcher's mound?

