

5-8

Practice

The Law of Cosines

Solve each triangle. Round to the nearest tenth.

1. $a = 20, b = 12, c = 28$
 $A = 38.2^\circ, B = 21.8^\circ,$
 $C = 120.0^\circ$

2. $a = 10, c = 8, B = 100^\circ$
 $b = 13.8, A = 45.5^\circ, C = 34.5^\circ$

3. $c = 49, b = 40, A = 53^\circ$
 $a = 40.5, B = 52.0^\circ,$
 $C = 75.0^\circ$

4. $a = 5, b = 7, c = 10$
 $A = 27.7^\circ, B = 40.5^\circ, C = 111.8^\circ$

Find the area of each triangle. Round to the nearest tenth.

5. $a = 5, b = 12, c = 13$
 30.0 units^2

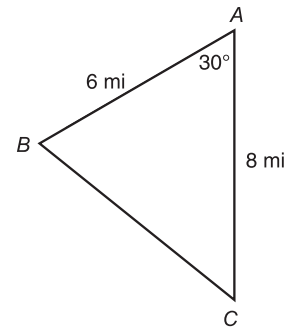
6. $a = 11, b = 13, c = 16$
 71.0 units^2

7. $a = 14, b = 9, c = 8$
 33.7 units^2

8. $a = 8, b = 7, c = 3$
 10.4 units^2

9. The sides of a triangle measure 13.4 centimeters, 18.7 centimeters, and 26.5 centimeters. Find the measure of the angle with the least measure.
about 28.3°

10. **Orienteering** During an orienteering hike, two hikers start at point A and head in a direction 30° west of south to point B . They hike 6 miles from point A to point B . From point B , they hike to point C and then from point C back to point A , which is 8 miles directly north of point C . How many miles did they hike from point B to point C ?
4.1 mi



5-8

The Law of Cosines

The law of cosines is used to find the length of a side of a triangle if two sides and the included angle are known, or to find an angle if two sides and the included angle are known. It is also used to find the length of a side of a triangle if one side and two angles are known, or to find an angle if one side and two angles are known.

Answer the questions about the Law of Cosines.

- If the value of x is close to? **1**
- If the value of x happens to be **decreases**
- If x equals the equation **0, $y^2 =$**
- What happens and approximately **decreases**
- Consider 19 for b . get by solving **See student**
 - In view should **Xmin**
 - Display maximum **See student**
 - How do **Ymin**