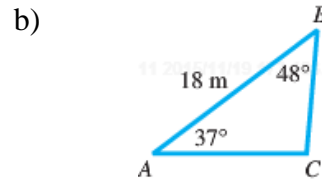
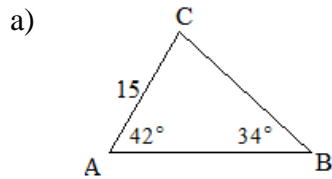


14.6 In-class Practice

1. Use the law of sines to solve each triangle.



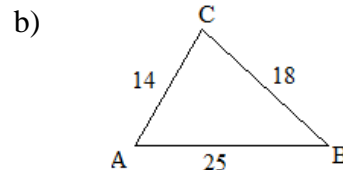
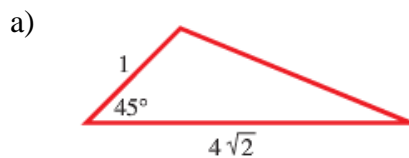
c) $\angle C = 74.08^\circ$, $\angle B = 69.38^\circ$, $c = 45.38 \text{ m}$

d) $\angle B = 38^\circ 40'$, $a = 19.7 \text{ cm}$, $\angle C = 91^\circ 40'$

2. Let \overline{AB} be a segment 652 feet long on one bank of a stream, and C be a point on the opposite bank. If $\angle A = 53^\circ 18'$, and $\angle B = 48^\circ 36'$, find the width of the stream from C to \overline{AB} .

3. An airport A is 480 km east of B . A pilot flew in the direction of 235° from A to C and then in the direction of 320° from C to B . Find the total distance that he flew.

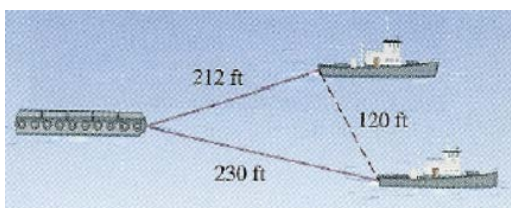
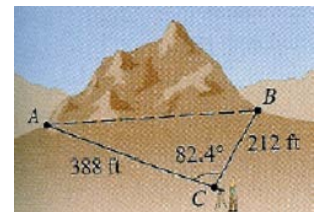
4. Use the law of cosines to solve each triangle.



c) $a = 2$, $b = 3$, $c = 4$

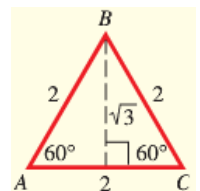
d) $\angle B = 112^\circ$, $a = 23$, $c = 31$

5. A tunnel is to be built through a mountain. To estimate the length of the tunnel, a surveyor makes the measurements as shown on the diagram. Use the surveyor's data to approximate the length of the tunnel.



6. Two tugboats that are 120 ft apart pull a barge. If the length of one cable is 212 ft and the length of the other is 230 ft, find the angle formed by the two cables.

7. Find the exact area of the triangle using the formula $A = \frac{1}{2}bh$ and then verify that the formula $A = \frac{1}{2}ab \sin \angle C$ gives the same result.



8. A real estate agent wants to find the area of a triangular lot. A surveyor takes measurements and finds the two sides are 52.1 meters and 21.3 meters, and the angle between them is 42.2° . What is the area of the triangular lot?

9. Find the smallest angle in a triangle with sides of length 5, 6, and 8; then find the area of the triangle accurate to two decimal places.