1. Use the law of cosines to determine the value of θ.

16 cm.

14 cm.

 θ

13 cm.

2. Use the law of cosines to determine the value of x.

5.5 cm.

 102$°$

x

5.2 cm.

3. Lifeguard stands are set up on the beach with 88 yards between stands A and B and 80 yards between stands B and C. The stands make an angle of 150$°$ at vertex B. A buoy line needs to be set up from lifeguard stand A to lifeguard stand C to mark a division between more shallow and deeper waters. About how long must the buoy line be?

4. Use the law of sines to determine the value of x

12 cm

68$°$

x cm

 40$°$

5. Use the law of sines to determine the value of θ.

15 cm

 106$°$

7 cm

 θ

6. A disabled ship (at point S) is sighted from two different lighthouses that are 8 miles apart (at points L1 and L2). If m$∠ $SL1L2 = 44$°$ and m$∠$SL2L1 = 66$°, $find the distance from the ship to the nearest lighthouse.