7.1 Oblique Triangles and the Law of Sines

Solve triangle ABC. If necessary, round the answer to the nearest tenth.

1) \( A = 40^\circ, B = 60^\circ, a = 2 \) meters

2) \( B = 40^\circ, C = 10^\circ, a = 5 \) feet

7.2 The Ambiguous Case of the Law of Sines

Solve the SSA triangle. Indicate whether the given measurements result in no triangle, one triangle, or two triangles. Solve the resulting triangle. Round angle measures to the nearest degree and lengths to the nearest tenth when necessary.

3) \( B = 80^\circ, b = 2, c = 3 \)

4) \( A = 30^\circ, a = 17, b = 34 \)

5) \( C = 35^\circ, a = 18.7, c = 16.1 \)

7.3 The Law of Cosines

Find the missing parts of the triangle. Round to the nearest tenth when necessary or to the nearest minute as appropriate.

6) \( C = 122.2^\circ \)
   \( a = 8 \) km
   \( b = 10.4 \) km

7) \( a = 8.6 \) in.
   \( b = 13.9 \) in.
   \( c = 16.5 \) in.
Answer Key
Testname: 1720CH7REVIEW

1) $C = 80^\circ$, $b = 2.7 \text{ m}$, $c = 3.1 \text{ m}$
2) $A = 130^\circ$, $b = 4.2 \text{ ft}$, $c = 1.1 \text{ ft}$
3) No triangle exists.
4) $B = 90^\circ$, $C = 60^\circ$, $c = 29.4$
5) Solution 1: $A = 42^\circ$, $B = 103^\circ$, $b = 27.4$
   Solution 2: $A = 138^\circ$, $B = 7^\circ$, $b = 3.4$
6) $c = 16.2 \text{ km}$, $A = 42.5^\circ$, $B = 33.3^\circ$
7) $A = 31.4^\circ$, $B = 57.4^\circ$, $C = 91.2^\circ$