

## The Law of Sines

1. Solve each triangle. Round side lengths and angle measures to the nearest tenth.

a.  $a = 3.5$ ,  $A = 25^\circ$ ,  $B = 35^\circ$

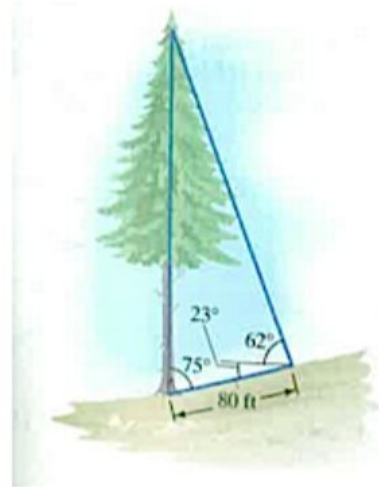
b.  $a = 48$ ,  $A = 110^\circ$ ,  $b = 16$

8.1 The Law of Sines

8.2 The Law of Cosines

Honors Algebra 2 with Trig

2. A pine tree growing on a hillside makes a  $75^\circ$  angle with the hill. From a point 80 feet up the hill, the angle of elevation to the top of the tree is  $62^\circ$  and the angle of depression to the bottom is  $23^\circ$ . Find, to the nearest foot, the height of the tree.



**The Law of Cosines**

3. Solve each triangle. Round side lengths and angle measures to the nearest tenth.
- a.  $a = 145$ ,  $b = 132$ ,  $c = 84$

- b.  $a = 8.5$ ,  $c = 7.7$ ,  $B = 38^\circ$
4. A plane leaves an airport in Antwerp and travels 580 miles to an airport in Berlin on a bearing of  $N34^\circ E$ . The plane leaves the Berlin airport and travels to the Cairo airport 400 miles away on a bearing of  $S74^\circ E$ . Find the distance between the airports in Antwerp and Cairo. Round to the nearest tenth of a mile.
5. Solve the triangle below. (Use Law of Sines and/or Law of Cosines). Round side lengths and angle measures to the nearest tenth.  
 $A = 162^\circ$ ,  $b = 11.2$ ,  $c = 48.2$

### The Ambiguous Case (SSA)

6. Determine the number of triangles that can be formed with the given information.

a.  $b = 9, c = 12, C = 63^\circ$

b.  $a = 27, b = 22, B = 33^\circ$

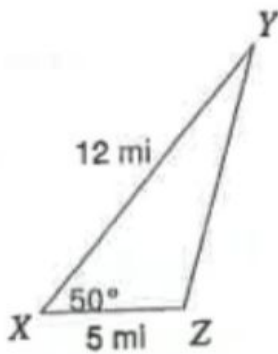
c.  $a = 10, b = 30, A = 150^\circ$

7. Solve the triangle. If more than one solution is possible, find both solutions.  
a.  $a = 25$ ,  $c = 26$ ,  $A = 70^\circ$

### Area of oblique triangles

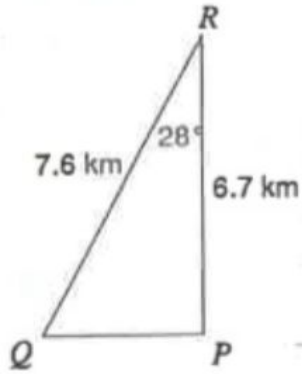
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8. Find the area of each triangle below. Round your answer to the nearest hundredth.  
a. b.  $a = 145$ ,  $b = 132$ ,  $c = 84$



8.1 The Law of Sines  
8.2 The Law of Cosines  
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c.



d.  $a = 90^\circ$ ,  $a = 13$ ,  $b = 12$