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## Practice

## The Ambiguous Case for the Law of Sines

Determine the number of possible solutions for each triangle.

1.  $A = 42^\circ, a = 22, b = 12$

1

2.  $a = 15, b = 25, A = 85^\circ$

0

3.  $A = 58^\circ, a = 4.5, b = 5$

2

4.  $A = 110^\circ, a = 4, c = 4$

0

Find all solutions for each triangle. If no solutions exist, write none. Round to the nearest tenth.

5.  $b = 50, a = 33, A = 132^\circ$

none

6.  $a = 125, A = 25^\circ, b = 150$

$$B = 30.5^\circ, C = 124.5^\circ, c = 243.7;$$

$$B = 149.5^\circ, C = 5.5^\circ, c = 28.3$$

7.  $a = 32, c = 20, A = 112^\circ$

$$B = 32.6^\circ, C = 35.4^\circ,$$

$$b = 18.6$$

8.  $a = 12, b = 15, A = 55^\circ$

none

9.  $A = 42^\circ, a = 22, b = 12$

$$B = 21.4^\circ, C = 116.6^\circ,$$

$$c = 29.4$$

10.  $b = 15, c = 13, C = 50^\circ$

$$A = 67.9^\circ, B = 62.1^\circ, a = 15.7;$$

$$A = 12.1^\circ, B = 117.9^\circ, a = 3.6$$

11. **Property Maintenance** The McDougalls plan to fence a triangular parcel of their land. One side of the property is 75 feet in length. It forms a  $38^\circ$  angle with another side of the property, which has not yet been measured. The remaining side of the property is 95 feet in length. Approximate to the nearest tenth the length of fence needed to enclose this parcel of the McDougalls' lot.
- about 312.1 ft

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## Example

## Solve each s

1.  $a = 56^\circ, b$   
 $A = 41^\circ$
3.  $a = 76^\circ, b$   
 $A = 59^\circ$