

Secondary Math III
Law of Sines
Assignment 7.3

Name _____
Period _____

Use the *Law of Sines* to solve triangle ABC.

- Draw and label the triangles first.
- Determine which situation is given: ASA, AAS or SSA.
- If two triangles exist, solve both triangles and write both values on provided line.
- Round all angle measures to the nearest degree and all side lengths to the nearest tenth.

1. $A = 14^\circ$, $B = 62^\circ$, $a = 4.3$

Given Situation: _____

Angle C = _____

Side b = _____

Side c = _____

2. $A = 25^\circ$, $C = 37^\circ$, $b = 13$

Given Situation: _____

Angle B = _____

Side a = _____

Side c = _____

3. $A = 36^\circ$, $a = 8$, $b = 5$

Given Situation: _____

Angle B = _____

Angle C = _____

Side c = _____

4. $A = 58^\circ$, $a = 11.4$, $b = 12.8$

Given Situation: _____

Angle B = _____

Angle C = _____

Side c = _____

5. $C = 76^\circ$, $c = 18$, $a = 20$

Given Situation: _____
Angle A = _____
Angle B = _____
Side b = _____

6. You are standing 40 meters due east from the base of a pine tree that is leaning 8° from the vertical away from you (toward the west). The angle of elevation from your feet to the top of the tree is 20° . Find the length of the tree.

Review:

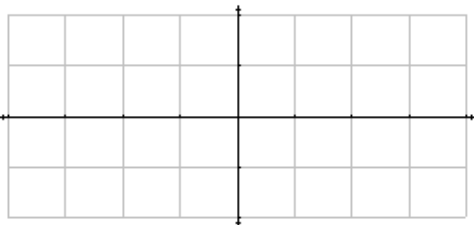
Solve the trig equation for all solutions of in the interval $[0, 2\pi)$.

7. $3 \tan^2 x - 1 = 0$

Graph two periods for each function. Find the amplitude/reflections, period and shifts first. Include scales on both axes.

8. $f(x) = 2 \sin(2x)$

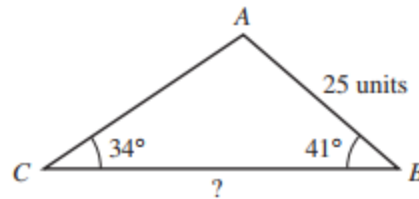
A _____ P _____



ACT:

9. In $\triangle ABC$, shown below, the measure of $\angle B$ is 41° , the measure of $\angle C$ is 34° , and \overline{AB} is 25 units long. Which of the following is an expression for the length, in units, of \overline{BC} ?

(Note: The law of sines states that, for any triangle, the ratios of the sines of the interior angles to the lengths of the sides opposite those angles are equal.)



- A. $\frac{25 \sin 105^\circ}{\sin 41^\circ}$
- B. $\frac{25 \sin 105^\circ}{\sin 34^\circ}$
- C. $\frac{25 \sin 75^\circ}{\sin 41^\circ}$
- D. $\frac{25 \sin 41^\circ}{\sin 105^\circ}$
- E. $\frac{25 \sin 34^\circ}{\sin 75^\circ}$