

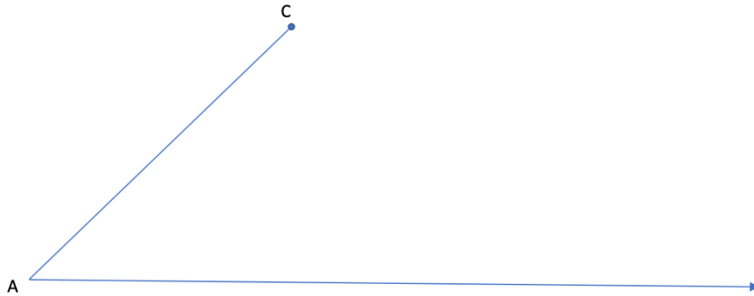
Could You Be More Ambiguous?

Name: _____



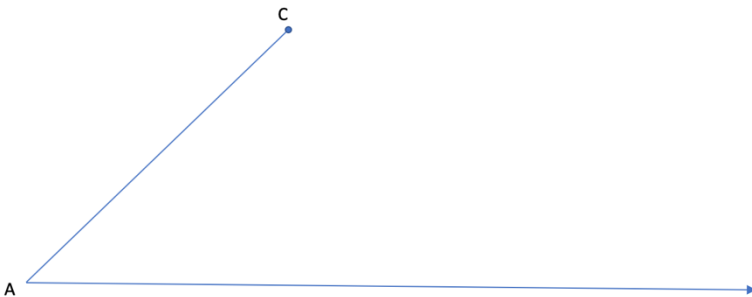
Yesterday we learned that we can use the Law of Sines to solve for missing sides and angles in triangles that are not right triangles. What information do we need to be given in order to apply the Law of Sines? What kind of problems might we run into?

1. In $\triangle ABC$, you are given that $m\angle A = 45^\circ$, $AC = 4.8$ cm and $CB = 6$ cm. Draw the rest of the triangle.



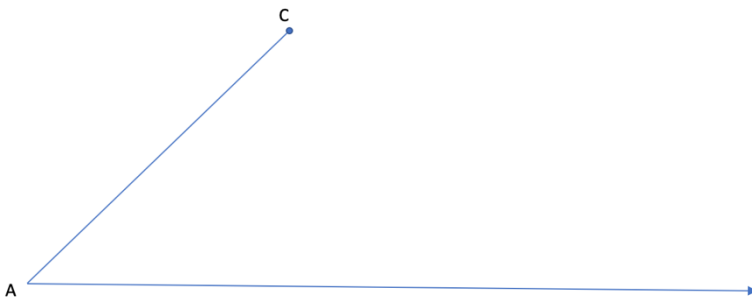
Use the Law of Sines to find $m\angle B$, if possible.

2. In $\triangle ABC$, you are given that $m\angle A = 45^\circ$, $AC = 4.8$ cm and $CB = 2$ cm. Draw the rest of the triangle.



Use the Law of Sines to find $m\angle B$, if possible.

3. In $\triangle ABC$, you are given that $m\angle A = 45^\circ$, $AC = 4.8$ cm and $CB = 4$ cm. Draw the rest of the triangle.



Use the Law of Sines to find $m\angle B$, if possible.

4. Why is using the Law of Sines when you are given two sides and an angle not straight forward?

5. Go to <https://bit.ly/3oZY5vM>. Keep angle A at 30° and side b at 9 to start.
- Play around with what happens when you adjust the length of side a . Note that side a is across from our fixed angle A .
 - For what value of a do we get a right triangle? Why does this make sense?
 - List some values of a that would cause NO triangle to be formed. Do you notice any patterns?
 - List some values of a that create TWO possible triangles (vertex B could be in two different places). Do you notice any patterns?
 - List some values of a that create only ONE possible triangle. Do you notice any patterns?
6. Now make angle A 150° . Keep side b at 9.
- How long does side a have to be to actually form a triangle?
 - For what values of a would there be more than one possible triangle? Explain.

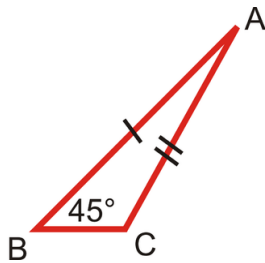
Section 5.1 Day 2—The Ambiguous Case (SSA)

Important Ideas:

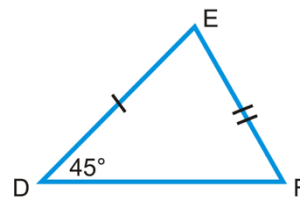
Check Your Understanding!

1. Students are asked to draw a triangle where one side length is 5.5, its opposite angle is 45° and another side length is 6.5.

Sasha's Answer



Ricardo's Answer



Explain using the Law of Sines why both Sasha's and Ricardo's answer could be correct.

2. Indicate whether the given measurements result in no triangle, one triangle, or two triangles. Solve the resulting triangle or triangles. Round the answer to the nearest tenth.

a) $B = 22^\circ$, $b = 16.8$, $a = 22.42$

b) $A = 96^\circ$, $a = 13$, $c = 24$