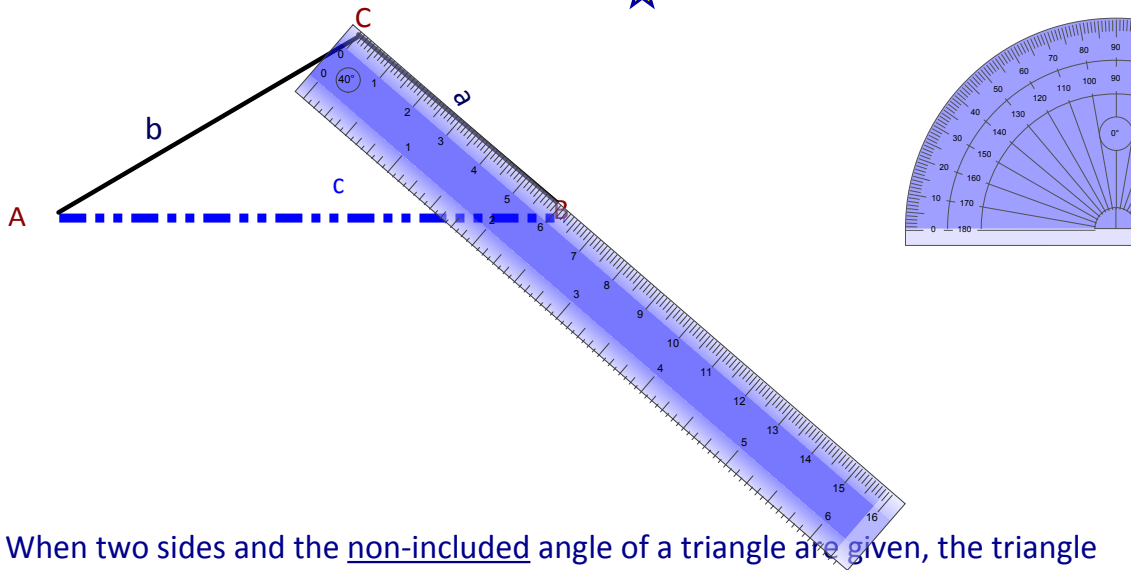


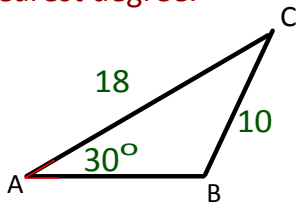
Lesson 4.6A: Sine Law - AMBIGUOUS Case

Draw triangle $\triangle ABC$, $a = 6$ cm, $b = 8$ cm, $A = 30^\circ$.

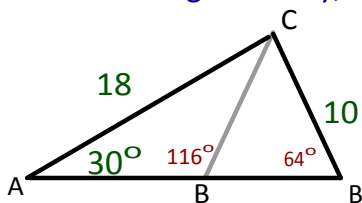


- When two sides and the non-included angle of a triangle are given, the triangle may not be unique. (SSA)
- You will have to determine if there is **no** solution, **one** solution or **two** possible solutions.

Ex. 1: Given that $\triangle ABC$ has $\angle A = 30^\circ$, $a = 10$, and $b = 18$, find the value of $\angle B$ to the nearest degree.



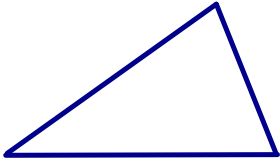
As we see algebraically, there are two possible answers to this question.



Therefore, it is very important to always *consider* both solutions (Q1 & Q2) when using Sine Law to solve a triangle given SSA.

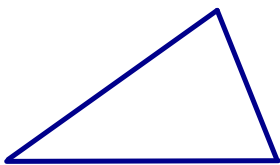
Ex. 2: Determine the measures of all angles in the given triangles.

a) In $\triangle DEF$, $\angle D = 72^\circ$, $d = 9$ cm, $f = 7$ cm.



Pull

b) In $\triangle ABC$, $\angle A = 18^\circ$, $a = 2$ cm, $b = 10$ cm.



Pull

c) In ΔPQR , $\angle Q = 135^\circ$, $q = 15$ cm, $r = 10$ cm.

Pull

d) In ΔPQR , $\angle Q = 23^\circ$, $q = 7$ cm, $r = 12$ cm.

Pull