ASS Cases for the Law of Sines

You can use the Law of Sines to solve triangles given any two angles and a side (ASA, AAS) or when given any two sides and the non-included angle (ASS), provided the triangle exists.

Here are the cases for ASS:

If the triangle is **obtuse** and:

** the side opposite is greater than the side adjacent, then there is 1 triangle.

** the side opposite is less than or equal to the side adjacent, then there are no triangles.

If the triangle is acute and:

** the side opposite is greater than or equal to the side adjacent, then there is 1 triangle.

** the side opposite is less than the side adjacent, this is the ambiguous case and you will need to test.

Test: Find the height, $h$.  

$h = b \sin A$

If the opposite is greater than the height, $h$, then there are 2 triangles.

If the opposite is less than the height, $h$, then there are no triangles.

If the opposite is equal to the height, $h$, then there is 1 triangle.