# Math SL EXPLORATION LAB 6

Working with the Sine Law - The Ambiguous Case of the Sine Law

PART A - The Investigation

Objective: Use the pipe cleaners to create as many triangles as possible.

1. Draw an extended baseline that is at least 24 inches in length and label **one end** as point A. Do **not** label a second endpoint. **Part of this side** will become side AB of a triangle.

2. Use one pipe cleaner that is 8 inches long and place one end at point A. You have now created side AC of a triangle (where point C is at the end of this pipe cleaner).

3. Measure the angle at A such that it is exactly 30°.

4. Side CB is a second pipe cleaner (darker color) and it will be 12 inches long.

5. Now record the measure of each side and each angle and record these measurements in a diagram of this triangle you have created, ΔABC. (see diagram)
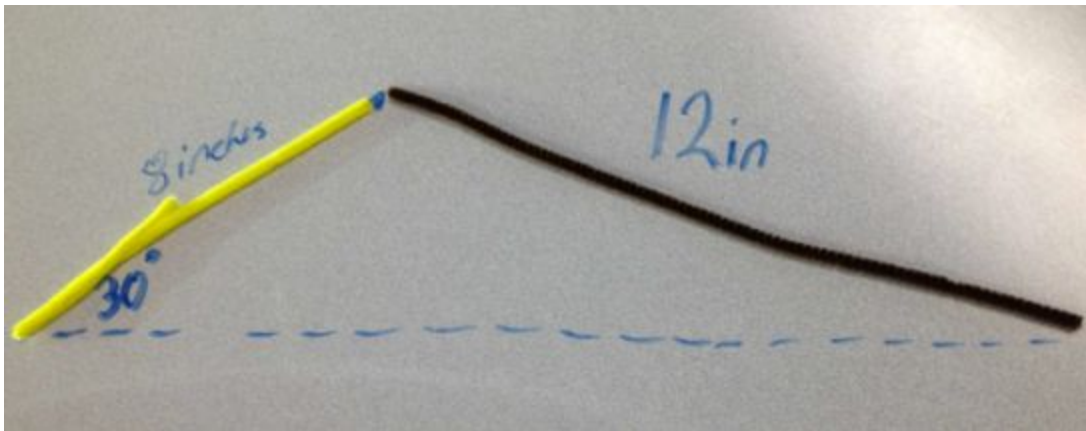
6. To create other triangles, keep side AC as 8 inches and keep angle A as 30°. Now side CB can be shortened by 1 inch increments, so it will now be 11 inches. Once again, record the measure of each side and each angle and record these measurements in a diagram of this triangle you have created, ΔABC.

7. Continue creating triangles by shortening side CB by 1 inch increments. Record all triangles you constructed by drawing diagrams.

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PART B - The Practice

Find the two solutions to these triangles which are defined using the standard labelling:

	a cm	b cm	A
1.	7.4	18.1	20°
2.	13.3	19.5	14°
3.	13.5	17	28°
4.	10.2	17	15°
5.	7.4	15.2	20°
6.	10.7	14.1	26°
7.	11.5	12.6	17°
8.	8.3	13.7	24°