

Lab 2.5 - Triangles of All Kinds

In this lab, you will use Boolean operators to determine what sort of triangle a user is describing when entering answers to prompts.

Part 1: Is that even possible

1. Write a Snap! program that asks the user for the lengths of all three sides of a triangle (a , b , c). Store each length in a variable. Then use the say block to display the perimeter of the triangle with those three side lengths.
2. **Real Triangle Check:** Modify your script to check the three side lengths can form a Real triangle. Remember that, in any Real triangle, the sum of the lengths of any two sides is greater than the length of the third side. So, if the triangle has side lengths a , b , and c , then all of the following must be true:

$$a + b > c$$

$$a + c > b$$

$$b + c > a$$

If the sides given cannot make a real triangle, say "This is not a Real triangle", instead of displaying the perimeter.

Part 2: What kind of triangle

1. Modify your script to determine and say whether or not the triangle described is a right triangle. If the triangle has side lengths a , b , and c , then the triangle is a right triangle if the following is true:
- $$a^2 + b^2 = c^2$$
2. Modify your script to determine which type of triangle has the side lengths given. A triangle can be one of the following three types:

Triangle type	Description
Equilateral	All three side lengths equal
Isosceles	Two side lengths equal, one different
Scalene	All three side lengths different



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Grading Scheme/Rubric

Lab 2.5 Criteria	Points
Part 1	
1.2 Computes perimeter or says invalid	1.0 points
Part 2	
2.1 Identifies right	0.25 points
Identifies equilateral	0.25 points
Identifies isosceles	0.25 points
Identifies scalene	0.25 points
PROJECT TOTAL	2.0 points



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