

Date: _____ Group: _____ Name(s): _____

Triangle Inequality

(Adapted from Geometry Activities for Middle School Students with the Geometer's Sketchpad, 1998)

Open the sketch Triangle_Inequality.gsp

Try to make a triangle using the lengths of sides a , b , and c in the table below. To adjust the length of a , b , or c , drag the right most endpoint of the parallel segments labeled “side a ”, “side b ”, or “side c ”. Then, swing the endpoints of the figure to see whether you can make a triangle. The endpoints must meet to form the vertices of the triangle. If a triangle is formed draw a picture of it in the space provided. If a triangle cannot be formed, write *impossible*.

#	Length of Side a	Length of Side b	Length of Side c	Triangle?
1	2.0 cm	3.0 cm	4.0 cm	
2	6.0 cm	1.0 cm	4.0 cm	
3	3.5 cm	2.0 cm	6.0 cm	
4	3.0 cm	4.0 cm	4.0 cm	
5	5.0 cm	5.0 cm	6.0 cm	
6	2.0 cm	7.0 cm	4.0 cm	

Why was it impossible to construct a triangle with some of the given lengths?

Write a conjecture about the relationship among the lengths of the three sides of a triangle.
