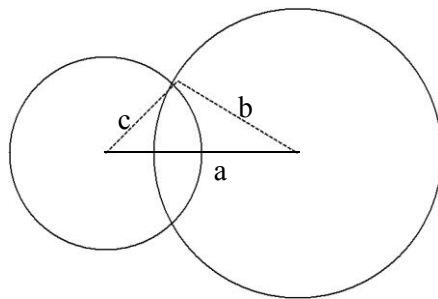


Theorem: If a , b , and c are numbers for which the sum of any two of them is greater than the third, then there is a triangle whose sides are of length a , b , and c .

Explain the following proof: Assume that $a \geq b$ and $a \geq c$. Draw a line segment of length a . At one end draw a circle of radius b . At the other end draw a circle of radius c . Join a point of intersection of these two circles with the end points of the line segment, as shown:

What needs explanation is why the two circles must intersect. Please be detailed in your response.



Why are the following two situations impossible? Please provide an explanation of your solution and/or reasoning.

