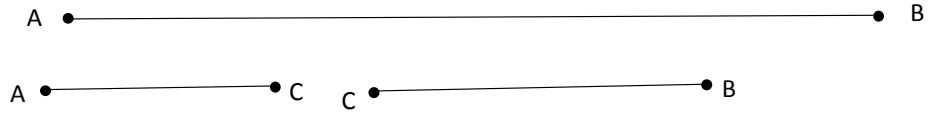**Answer on question 35541 – Math – Geometry**

Q. How to prove that sum of two sides of a triangle is greater than the third side.
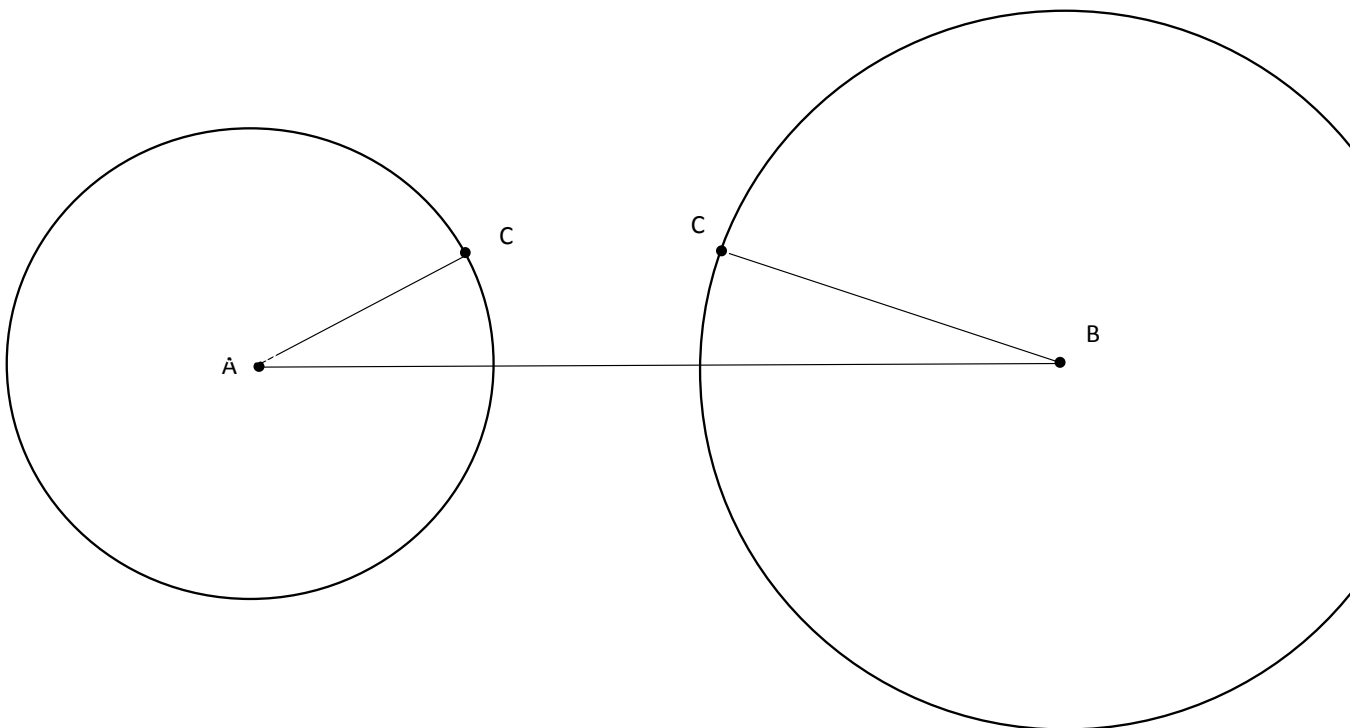
Proving

We will use the proof by contradiction

Suppose that one side is greater than the sum of two other sides. Let us draw them

A •————————————————————————• B

A •———————————• C   C •———————————• B

Now connect the vertices

No matter how we turn the shorter sides, they will never meet, and we cannot get a triangle with them.
It the sum of two sides equals the third side then first and second side would lie on the third side and we get a line.

So, the sum of two sides of a triangle is greater than the third side otherwise we cannot get the triangle.

QED.