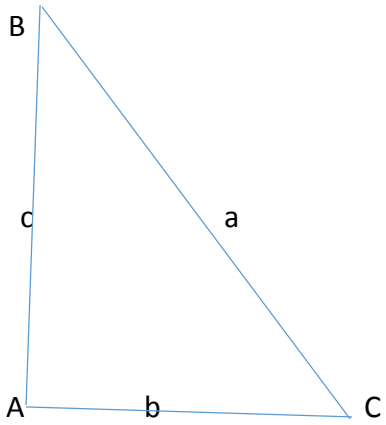
Answer on Question # 42446 – Math – Geometry

The given measurements may or may not determine a triangle. If not, then state that no triangle is formed. If a triangle is formed, then use the Law of Sines to solve the triangle, if it is possible, or state that the Law of Sines cannot be used.

C = 37°, a = 19, c = 8

Solution.

We have the triangle:



Using the law of sines we determine if we can form a triangle.

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}.$$

Firstly, we find A:

$$\frac{a}{\sin A} = \frac{c}{\sin C} \to \sin A = a \cdot \frac{\sin C}{c};$$

$$\sin A = 19 * \frac{\sin 37}{8} = 1.429.$$

So, we obtain $\sin A = 1.429$. As we can see this value is more than 1. Thus, the given measurements may not determine a triangle.