Answer on Question #53687 – Math - Trigonometry

A triangle has sides a = 2cm, b = 3cm and C = 60º. Find the length of side c.

Solution

The Cosine formula is the following:

$$a^2 - 2ab \cos \gamma + b^2 = c^2,$$

where γ is the angle against side c. Then

$$c = \sqrt{a^2 - 2ab \cos \gamma + b^2} = \sqrt{2^2 - 2 \cdot 2 \cdot 3 \cdot \cos 60° + 3^2} = \sqrt{4 - 12 \cdot \frac{1}{2} + 9} = \sqrt{4 - 6 + 9}$$

$$= \sqrt{7}$$

Thus, the length of side c is $\sqrt{7}$.

Answer: $\sqrt{7}$.