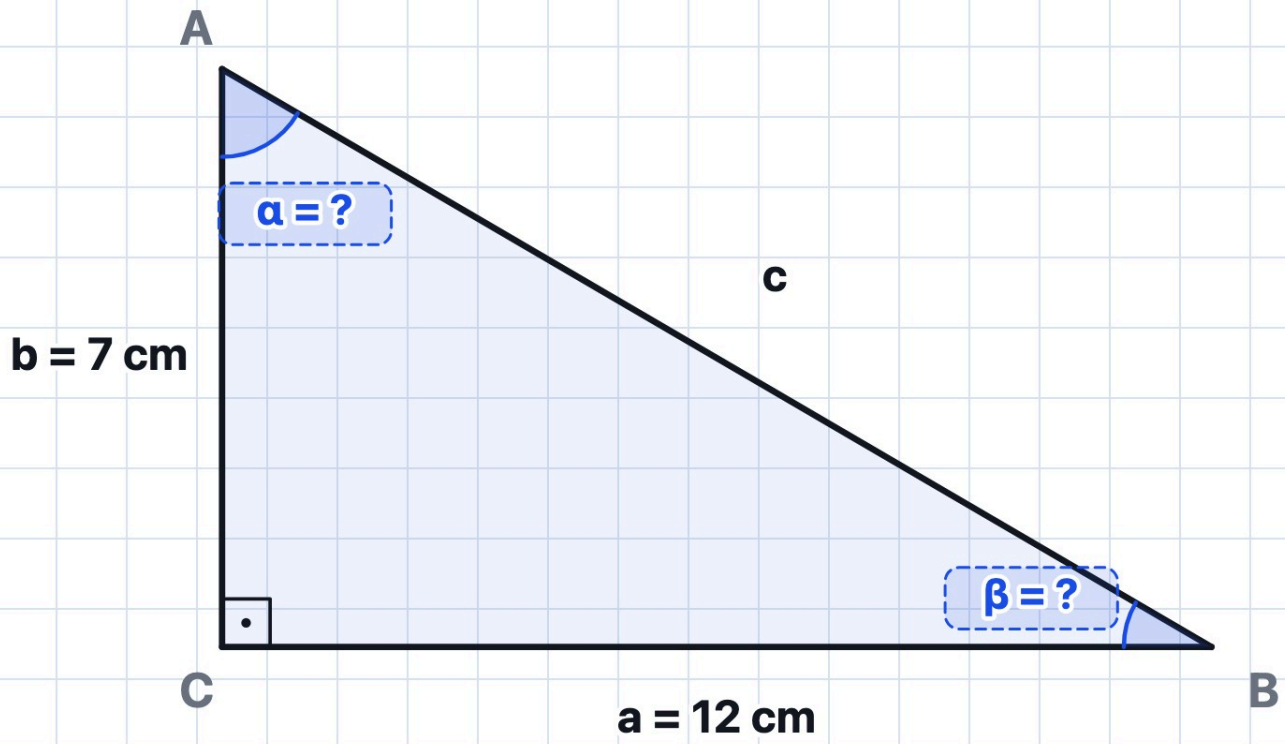
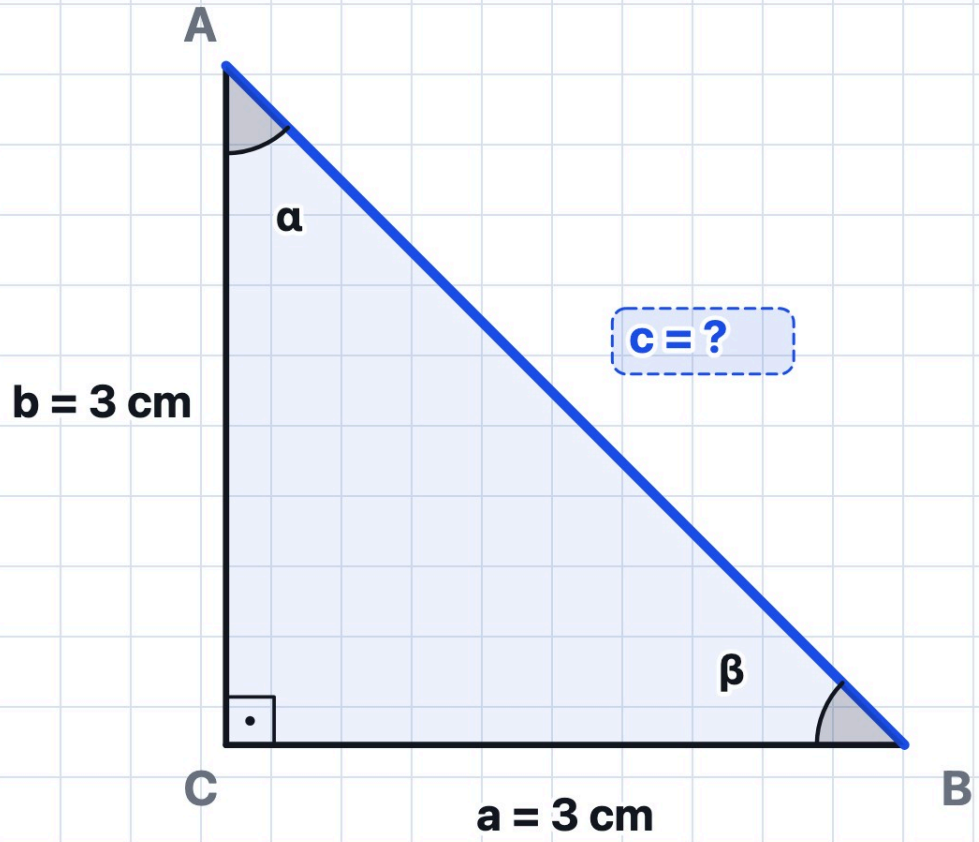
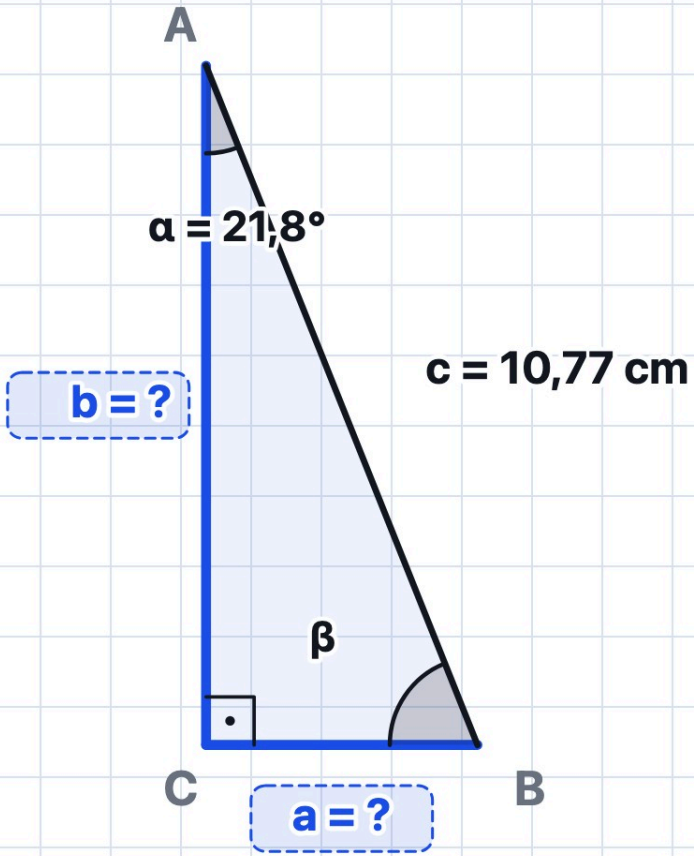
Berechne den Winkel α und den Winkel β.



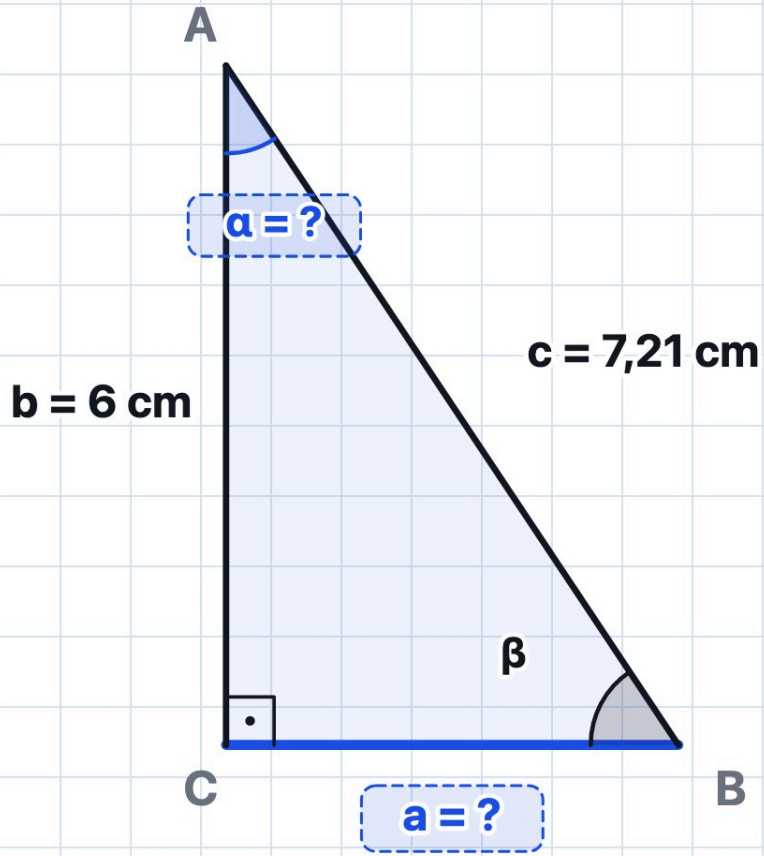
Berechne die Hypotenuse c.



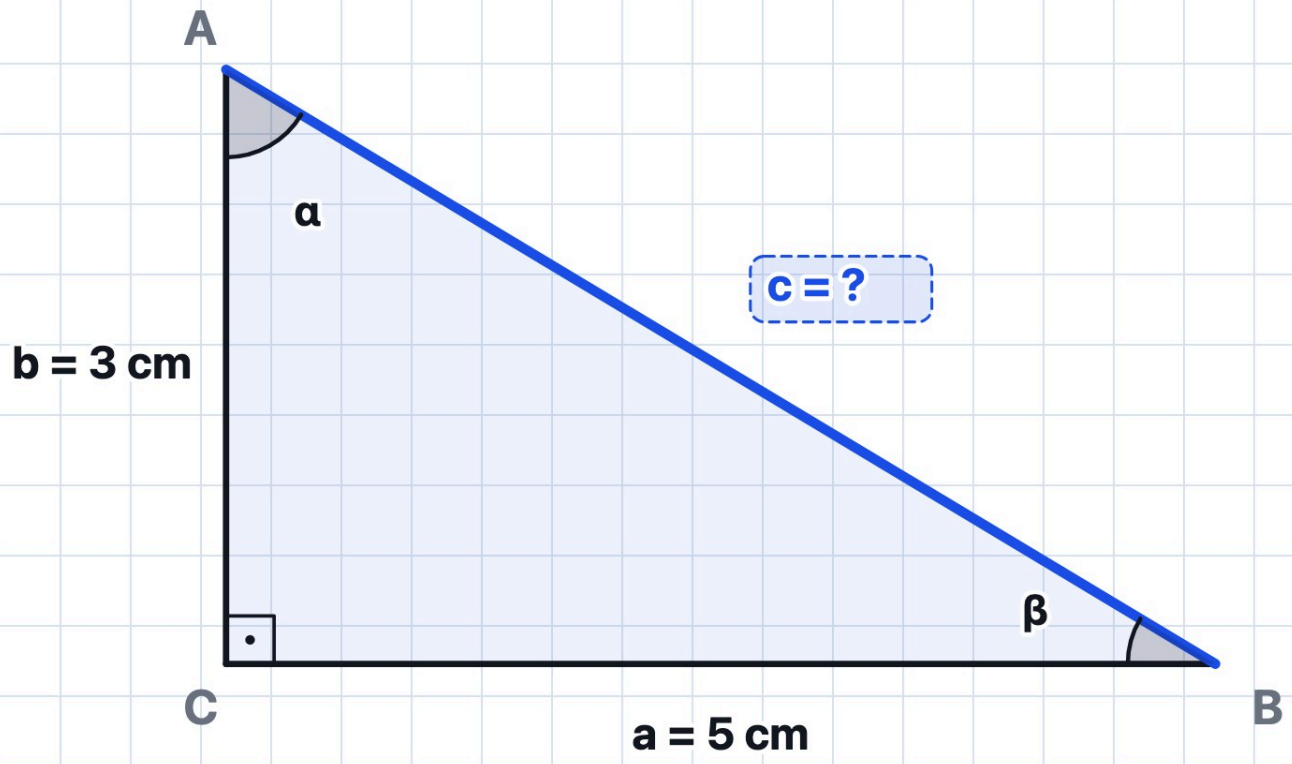
Berechne die Kathete a und die Ankathete b.



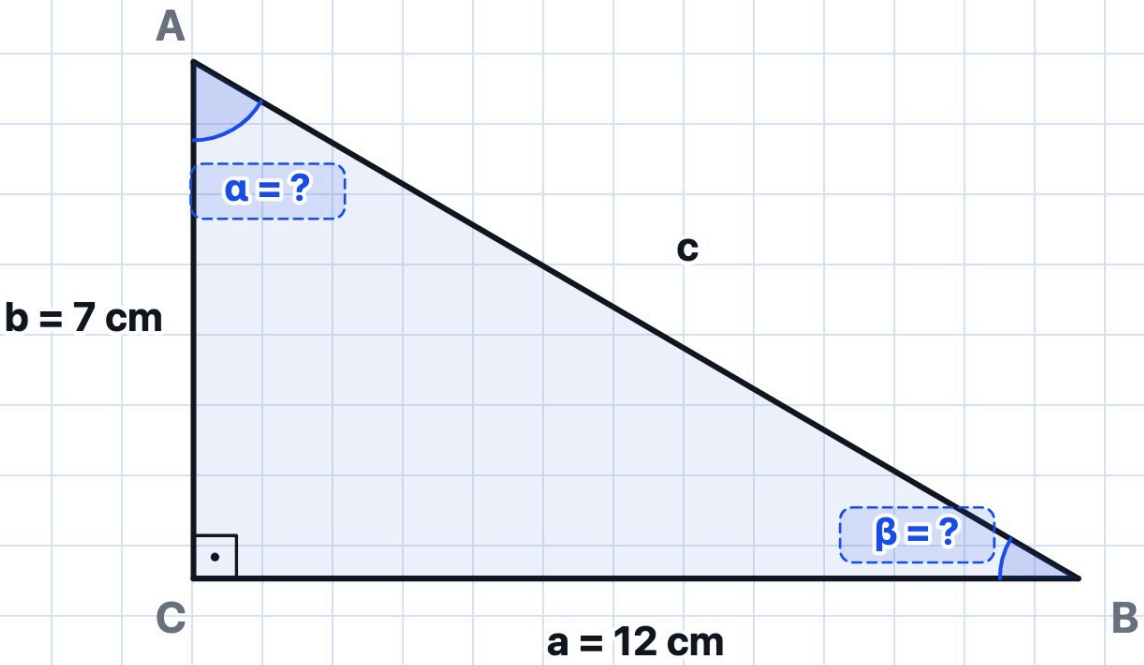
Berechne die Kathete a und den Winkel α.



Berechne die Hypotenuse c.



Berechne den Winkel α und den Winkel β.



Lösung

Winkel α

$\tan \alpha = a : b$

$\alpha = \tan^{-1}(12 : 7)$

$\alpha = 59{,}74°$

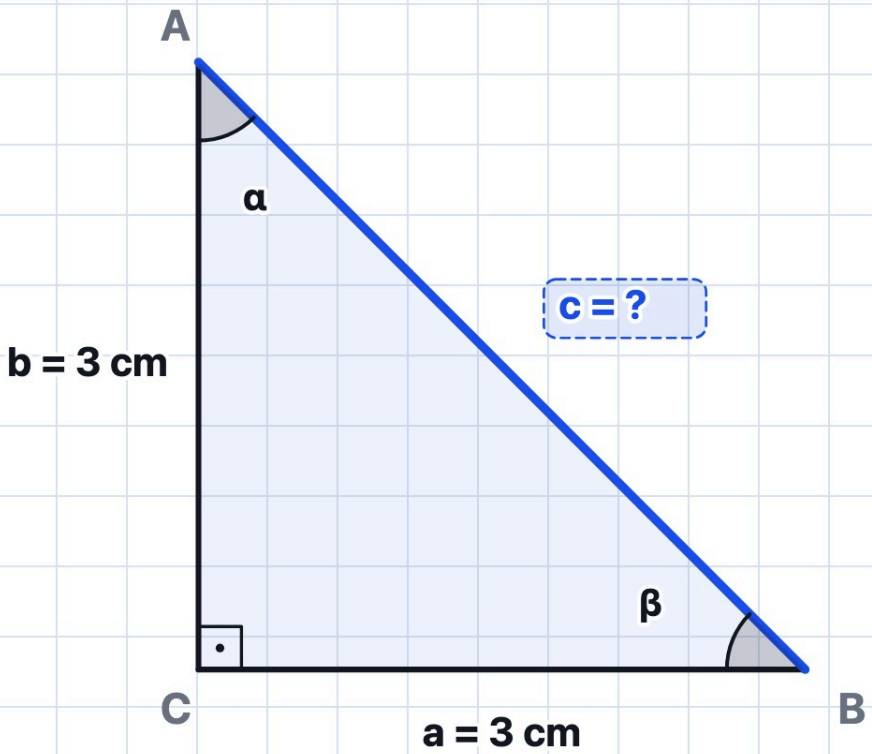
Winkel β

$\beta = 90° - \alpha$

$\beta = 90° - 59{,}74°$

$\beta = 30{,}26°$

Berechne die Hypotenuse c.



Lösung

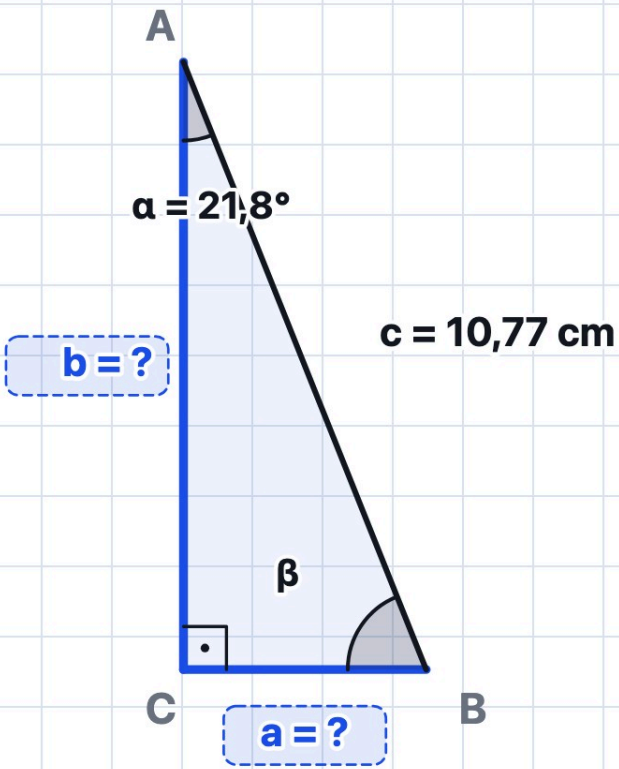
Hypotenuse c

$c = \sqrt{(a^2 + b^2)}$

$c = \sqrt{(3^2 + 3^2)}$

$c = 4{,}24$ cm

Berechne die Kathete a und die Ankathete b.



Lösung

Kathete a (Gegenkathete von α)

$a = c \cdot \sin \alpha$

$a = 10{,}77 \cdot \sin 21{,}8°$

$a = 4 \text{ cm}$

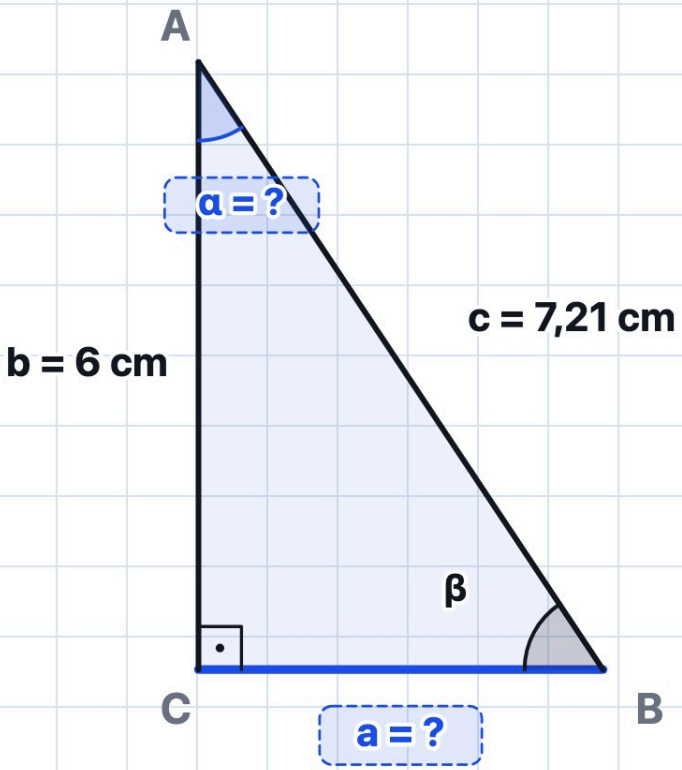
Kathete b (Ankathete von α)

$b = c \cdot \cos \alpha$

$b = 10{,}77 \cdot \cos 21{,}8°$

$b = 10 \text{ cm}$

Berechne die Kathete a und den Winkel α.



Lösung

Kathete a (Gegenkathete von α)

$a = \sqrt{(c^2 - b^2)}$

$a = \sqrt{(7{,}21^2 - 6^2)}$

$a = 4$ cm

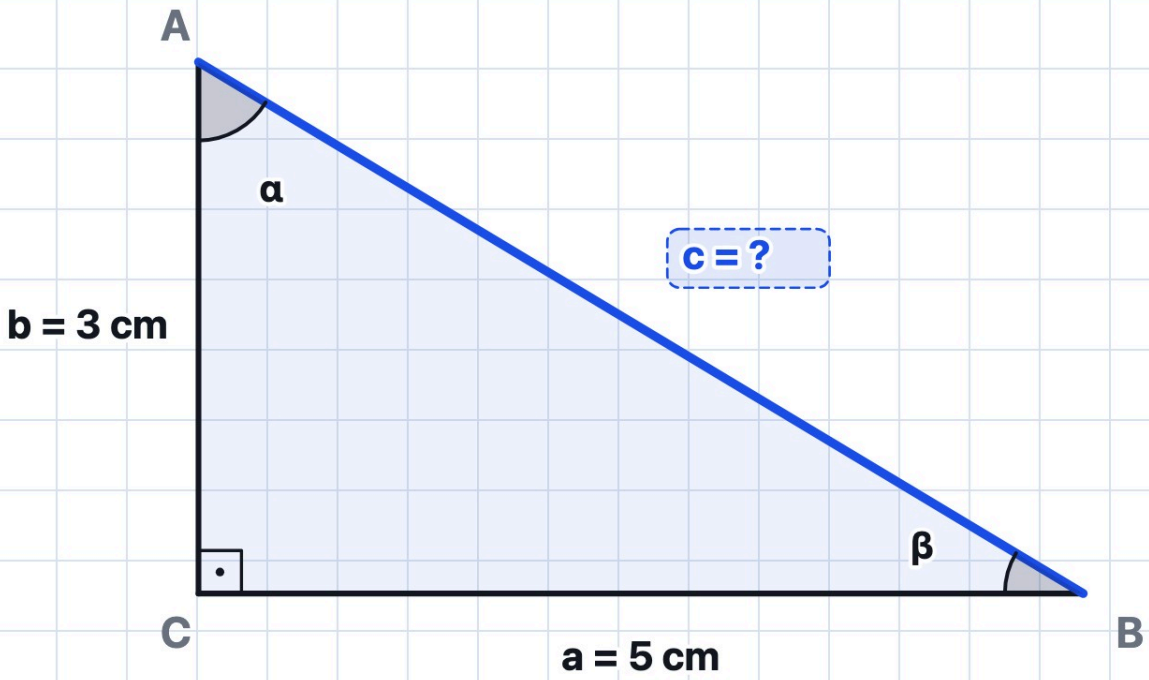
Winkel α

$\tan \alpha = a : b$

$\alpha = \tan^{-1}(4 : 6)$

$\alpha = 33{,}69°$

Berechne die Hypotenuse c.



Lösung

Hypotenuse c

$c = \sqrt{(a^2 + b^2)}$

$c = \sqrt{(5^2 + 3^2)}$

$c = 5{,}83$ cm