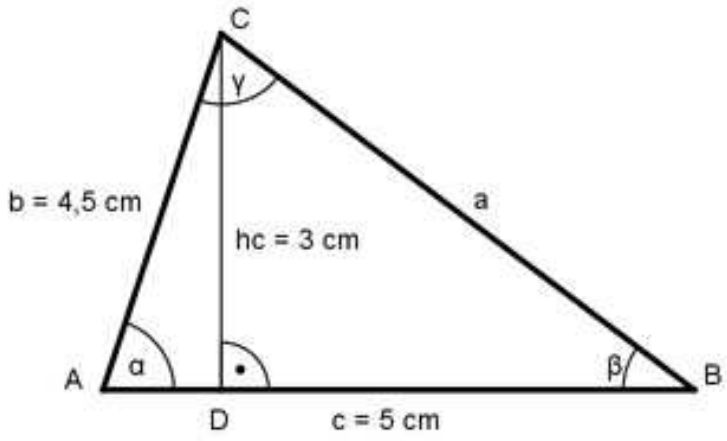
Trigonometrie Aufgabe 143

Berechnen Sie den Winkel γ, wenn b = 4,5 cm, c = 5 cm und hc = 3 cm.



$$\sin \alpha = \frac{h_c}{b} = \frac{3\ cm}{4,5\ cm} = 0,6667 \rightarrow \alpha = 41,8°$$

Fall SWS:

Cosinussatz:

$a^2 = b^2 + c^2 - 2 * b * c * \cos \alpha$

$a^2 = 4,5^2 + 5^2 - 2 * 4,5 + 5 * \cos 41,8°$

$a^2 = 4,5^2 + 5^2 - 2 * 4,5 * 5 * 0,7455$

$a^2 = 11,7 \mid \sqrt{}$

a = 3,4 cm

Sinussatz:

$$\frac{a}{\sin \alpha} = \frac{c}{\sin \gamma} \mid * \sin\gamma$$

$$\frac{a * \sin\gamma}{\sin \alpha} = c \mid * \sin \alpha$$

$a * \sin \gamma = c * \sin \alpha \mid :a$

$$\sin \gamma = \frac{c * \sin \alpha}{a} = \frac{5\ cm * \sin 41{,}8°}{3{,}4\ cm} = \frac{5\ cm * 0{,}6665}{3{,}4\ cm} = 0{,}9801 \rightarrow$$

γ = 78,6°