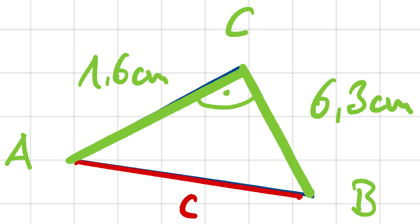
# WESTERMANN Mathematik 9II/III, **96/5**

Berechne die Hypotenusenlänge im rechtwinkligen Dreieck ABC mit

a) $\gamma = 90°$; $a = 6{,}3$ cm; $b = 1{,}6$ cm
b) $\alpha = 90°$; $c = 18$ m; $b = 80$ m
c) $\beta = 90°$; $a = 0{,}81$ m; $c = 3{,}60$ m
d) $\gamma = 90°$; $a = 11{,}2$ cm; $b = 8{,}25$ cm

a) Skizze:

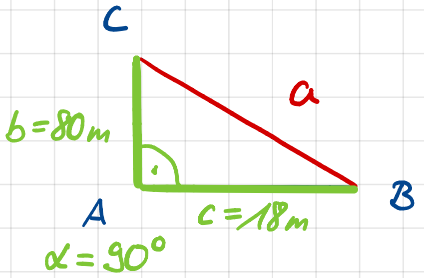



$$c^2 = (1{,}6\,\text{cm})^2 + (6{,}3\,\text{cm})^2 \quad | \sqrt{\phantom{x}}$$
$$c = \sqrt{(1{,}6\,\text{cm})^2 + (6{,}3\,\text{cm})^2}$$
$$c = \underline{\underline{6{,}5\,\text{cm}}}$$

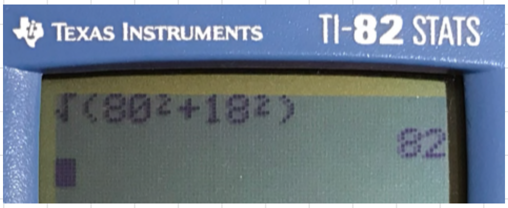
Um die Einheiten nicht unter der Wurzel „mitziehen“ zu müssen, gibt es noch folgende kürzere Schreibweise:

$$c^2 = (1{,}6\,\text{cm})^2 + (6{,}3\,\text{cm})^2 \quad | \sqrt{\phantom{x}}$$
$$c = \sqrt{1{,}6^2 + 6{,}3^2}\ \text{cm}$$
$$c = \underline{\underline{6{,}5\,\text{cm}}}$$

b) Skizze:



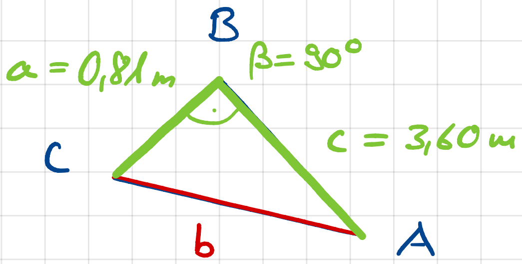

$$a^2 = (80\,\text{m})^2 + (18\,\text{m})^2 \quad | \sqrt{\phantom{x}}$$
$$a = \sqrt{(80\,\text{m})^2 + (18\,\text{m})^2}$$
$$a = \underline{\underline{82\,\text{m}}}$$




Und hier die kürzere Schreibweise:

$$a^2 = (80\,\text{m})^2 + (18\,\text{m})^2 \quad | \sqrt{\phantom{x}}$$
$$a = \sqrt{80^2 + 18^2}\ \text{m}$$
$$a = \underline{\underline{82\,\text{m}}}$$

c) Skizze:




$$b^2 = (3{,}60\,m)^2 + (0{,}81\,m)^2 \quad |\sqrt{\phantom{x}}$$

$$b = \sqrt{(3{,}60\,m)^2 + (0{,}81\,m)^2}$$

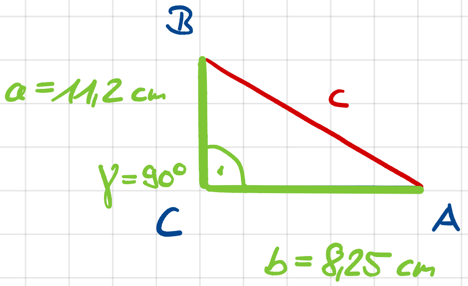
$$b = \underline{\underline{3{,}69\,m}}$$

Und hier die kürzere Schreibweise:

$$b = \sqrt{3{,}60^2 + 0{,}81^2}\;m$$

$$b = \underline{\underline{3{,}69\,m}}$$

d) Skizze:




$$c^2 = (11{,}2\,cm)^2 + (8{,}25\,cm)^2 \quad |\sqrt{\phantom{x}}$$

$$c = \sqrt{(11{,}2\,cm)^2 + (8{,}25\,cm)^2}$$

$$c = \underline{\underline{13{,}91\,cm}}$$

Und hier die kürzere Schreibweise:

$$c = \sqrt{11{,}2^2 + 8{,}25^2}\;cm$$

$$c = \underline{\underline{13{,}91\,cm}}$$