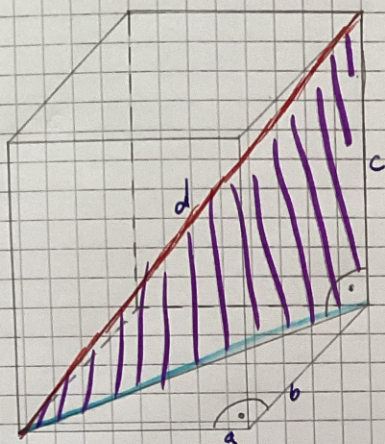


Raumdiagonale

Anwendung: Durstlöcher



$$\begin{aligned} 1. \quad a^2 + b^2 &= f^2 \\ (4\text{cm})^2 + (6\text{cm})^2 &= f^2 \\ 16\text{cm}^2 + 36\text{cm}^2 &= f^2 \\ 52\text{cm}^2 &= f^2 \quad | \sqrt{} \\ 7,2\text{cm} &\approx |f| \end{aligned}$$

$$\begin{aligned} 2. \quad f^2 + c^2 &= d^2 \\ (7,2\text{cm})^2 + (5\text{cm})^2 &= d^2 \\ 52\text{cm}^2 + 25\text{cm}^2 &= d^2 \\ 77\text{cm}^2 &= d^2 \quad | \sqrt{} \\ 8,77\text{cm} &\approx |d| \end{aligned}$$

$$\boxed{\begin{aligned} d^2 &= a^2 + b^2 + c^2 \\ d &= \sqrt{a^2 + b^2 + c^2} \end{aligned}}$$

Sachbeispiel:

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

$$d = \sqrt{(95\text{mm})^2 + (62\text{mm})^2 + (90\text{mm})^2}$$

$$d = \sqrt{9025\text{mm}^2 + 3844\text{mm}^2 + 8100\text{mm}^2}$$

$$d = \sqrt{20969\text{mm}^2}$$

$$d = 144,8\text{mm}^2$$

$$d = 14,48\text{mm}^2$$

A: Der Strohhalm muss mindestens 14,48cm lang sein.