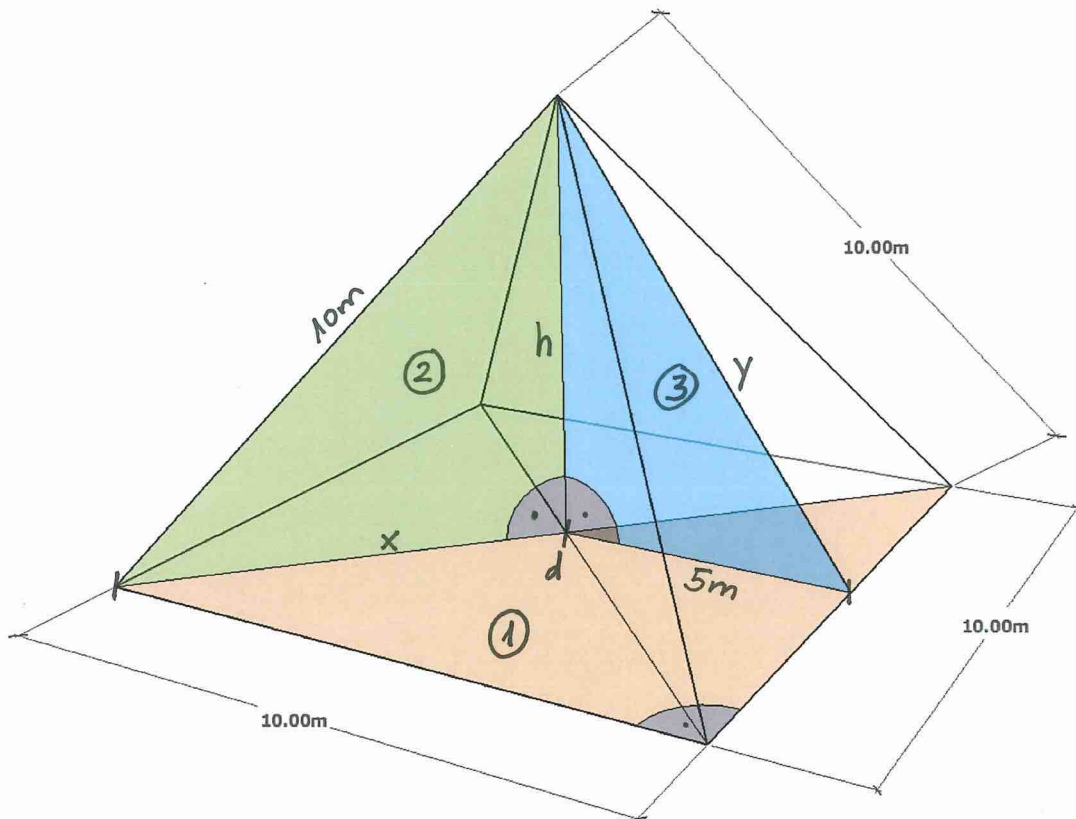


Berechne von der untenstehenden Pyramide das Volumen V und die Oberfläche O



Pythagoras ①

$$\begin{aligned} d^2 &= 10^2 + 10^2 \\ &= 100 + 100 \\ &= 200 \quad | \sqrt{} \\ d &= \sqrt{200} \text{ m} \end{aligned}$$

$$\begin{aligned} x &= \frac{d}{2} = \frac{\sqrt{200}}{2} = \frac{\sqrt{200}}{\sqrt{4}} \\ &= \sqrt{\frac{200}{4}} = \sqrt{50} \text{ m} \end{aligned}$$

Pythagoras ②

$$\begin{aligned} 10^2 &= x^2 + h^2 \\ &= \sqrt{50}^2 + h^2 \\ 100 &= 50 + h^2 \quad | -50 \\ 50 &= h^2 \quad | \sqrt{} \\ \sqrt{50} \text{ m} &= h \end{aligned}$$

$$\begin{aligned} \Rightarrow V &= \frac{(10\text{m})^2 \cdot \sqrt{50} \text{ m}}{3} \\ &= \frac{100 \cdot \sqrt{50}}{3} \text{ m}^3 \hat{=} \underline{\underline{235,7 \text{ m}^3}} \end{aligned}$$

Pythagoras ③

$$\begin{aligned} y^2 &= 5^2 + h^2 \\ &= 5^2 + \sqrt{50}^2 \\ &= 25 + 50 \\ &= 75 \quad | \sqrt{} \end{aligned}$$

$$y = \sqrt{75} \text{ m}$$

$$\begin{aligned} \Rightarrow O &= (10\text{m})^2 + 4 \cdot \frac{10\text{m} \cdot \sqrt{75} \text{ m}}{2} \\ &= \underline{\underline{100 \text{ m}^2 + 20 \cdot \sqrt{75} \text{ m}^2}} \\ &\hat{=} \underline{\underline{273,2 \text{ m}^2}} \end{aligned}$$