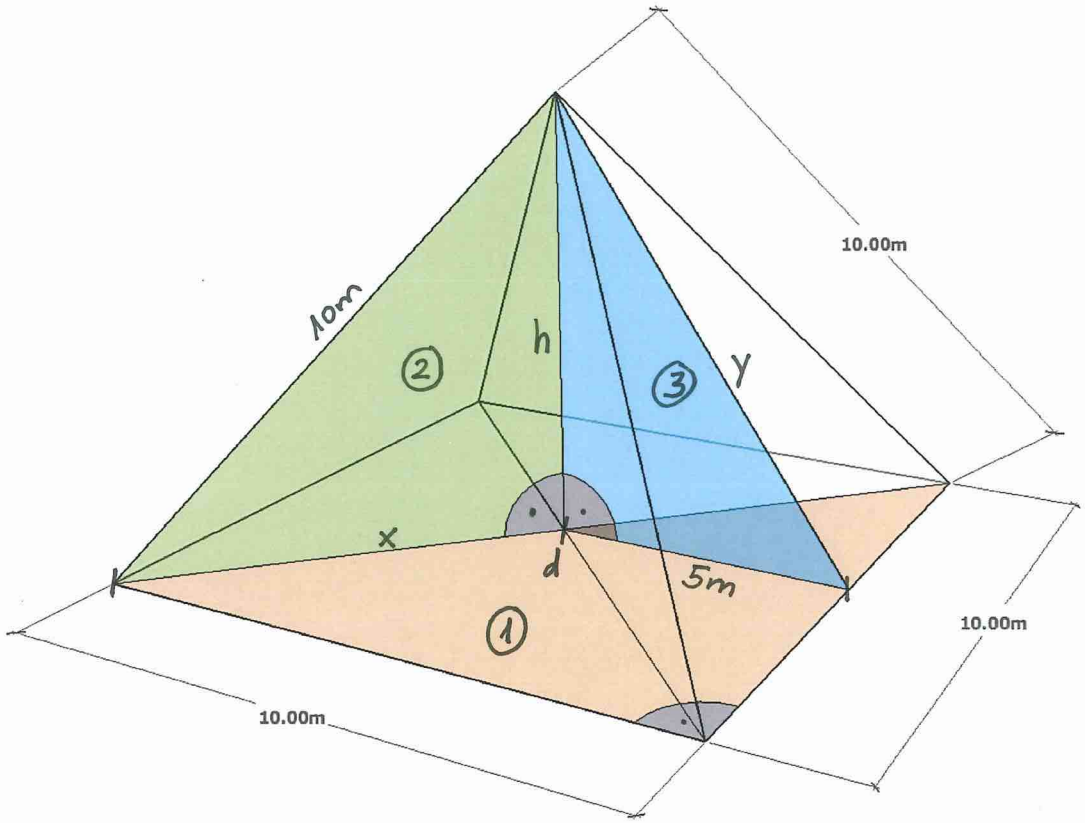
Berechne von der untenstehenden Pyramide das Volumen V und die Oberfläche O



Pythagoras ①

$d^2 = 10^2 + 10^2$

$= 100 + 100$

$= 200 \quad |\sqrt{}$

$d = \sqrt{200}\,m$

$x = \frac{d}{2} = \frac{\sqrt{200}}{2} = \frac{\sqrt{200}}{\sqrt{4}}$

$= \sqrt{\frac{200}{4}} = \sqrt{50}\,m$

Pythagoras ②

$10^2 = x^2 + h^2$

$= \sqrt{50}^2 + h^2$

$100 = 50 + h^2 \quad |-50$

$50 = h^2 \quad |\sqrt{}$

$\sqrt{50}\,m = h$

$\Rightarrow V = \frac{(10m)^2 \cdot \sqrt{50}\,m}{3}$

$= \frac{100 \cdot \sqrt{50}}{3}\,m^3 \approx 235{,}7\,m^3$

Pythagoras ③

$y^2 = 5^2 + h^2$

$= 5^2 + \sqrt{50}^2$

$= 25 + 50$

$= 75 \quad |\sqrt{}$

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

$\Rightarrow O = (10m)^2 + 4 \cdot \frac{10m \cdot \sqrt{75}\,m}{2}$

$= 100m^2 + 20 \cdot \sqrt{75}\,m^2$

$\approx 273{,}2\,m^2$