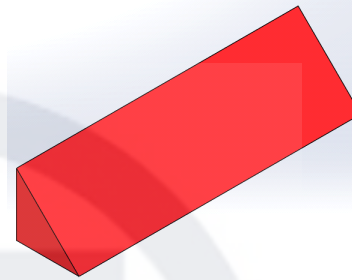


## Versuch "Trichterberechnung":

### Teil 1:

$$V1 := \frac{\frac{0.4 \cdot \text{m}}{2} \cdot \frac{0.4 \cdot \text{m}}{2}}{2} \cdot 0.9 \cdot \text{m}$$

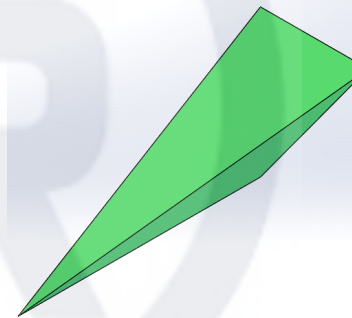
$$V1 = 0.018 \cdot \text{m}^3$$



### Teil 2:

$$V2 := \frac{\frac{0.8 \cdot \text{m}}{2} \cdot \left( \frac{1.5 \cdot \text{m}}{2} - \frac{0.4 \cdot \text{m}}{2} \right)}{2} \cdot \frac{0.9 \cdot \text{m}}{3}$$

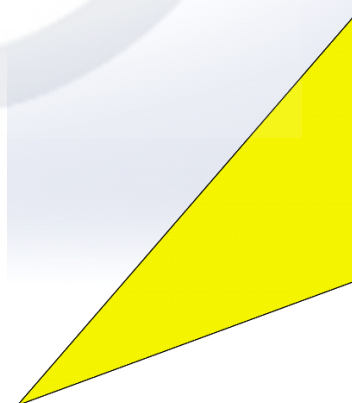
$$V2 = 0.033 \cdot \text{m}^3$$



### Teil 3:

$$V3 := \frac{\left( \frac{0.8 \cdot \text{m}}{2} - \frac{0.4 \cdot \text{m}}{2} \right) \cdot \frac{1.5 \cdot \text{m}}{2}}{2} \cdot \frac{0.9 \cdot \text{m}}{3}$$

$$V3 = 0.0225 \cdot \text{m}^3$$



**Teil 4:**

$$\text{Grundfläche} := \sqrt{\left(\frac{0.4 \cdot \text{m}}{2}\right)^2 + \left(\frac{0.4 \cdot \text{m}}{2}\right)^2} \cdot 0.9 \cdot \text{m} \quad \text{Grundfläche} = 0.2546 \text{ m}^2$$

$$\alpha := \text{atan}\left(\frac{\frac{0.8 \cdot \text{m}}{2}}{\frac{1.5 \cdot \text{m}}{2} - \frac{0.4 \cdot \text{m}}{2}}\right) \quad \alpha = 36.0274^\circ$$

$$\beta := 180^\circ - 45^\circ - \alpha \quad \beta = 98.9726^\circ$$

$$\gamma := 180^\circ - \beta \quad \gamma = 81.0274^\circ$$

$$\text{Hypotenuse} := \sqrt{\left(\frac{0.8 \cdot \text{m}}{2}\right)^2 + \left(\frac{1.5 \cdot \text{m}}{2} - \frac{0.4 \cdot \text{m}}{2}\right)^2} \quad \text{Hypotenuse} = 0.6801 \text{ m}$$

$$\text{Höhe\_Teil4} := \text{Hypotenuse} \cdot \sin(\gamma) \quad \text{Höhe\_Teil4} = 0.6718 \text{ m}$$

$$V4 := \frac{\text{Grundfläche} \cdot \text{Höhe\_Teil4}}{3} \quad V4 = 0.057 \cdot \text{m}^3$$

$$A\_Kreissegment := \frac{\left(\frac{0.4 \cdot \text{m}}{2}\right)^2 \cdot \pi}{4} - \frac{\left(\frac{0.4 \cdot \text{m}}{2} \cdot \frac{0.4 \cdot \text{m}}{2}\right)}{2} \quad A\_Kreissegment = 0.0114 \text{ m}^2$$

$$V5 := \frac{A\_Kreissegment \cdot 0.9 \cdot \text{m}}{3} \quad V5 = 0.0034 \cdot \text{m}^3$$

**Volumen total:**

$$V_{\text{tot}} := 4 \cdot (V1 + V2 + V3 + V4 + V5) \quad V_{\text{tot}} = 0.5357 \cdot \text{m}^3$$

