

$$1.1 \quad \tan \alpha = \frac{14 \text{ cm}}{3,5 \text{ cm}} \quad \alpha = 75,96^\circ \quad \checkmark$$

$$\tan \frac{\alpha}{2} = \frac{r}{3,5 \text{ cm}} \quad \checkmark \quad | \cdot 3,5 \text{ cm}$$

$$r = 3,5 \text{ cm} \cdot \tan 37,98^\circ \quad \checkmark$$

$$r = 2,73 \text{ cm} \quad \checkmark$$

(3)

$$1.2. \quad V_{\text{Kugel}} = \frac{4}{3} r^3 \pi = \frac{4}{3} \cdot (2,73 \text{ cm})^3 \pi = 85,23 \text{ cm}^3 \quad \checkmark$$

$$V_{\text{Kegelstumpf}} = V_{\text{Kegel}} - V_{\text{Kegel Spitze}}$$

$$V_{\text{Kegel}} = \frac{1}{3} \cdot (3,5 \text{ cm})^2 \pi \cdot 14 \text{ cm} = 179,59 \text{ cm}^3 \quad \checkmark$$

$$V_{\text{Spitze}} = \frac{1}{3} \cdot \left(\frac{\overline{DC}}{2}\right)^2 \pi \cdot h$$

$$\frac{\overline{DC}}{7 \text{ cm}} = \frac{14 \text{ cm} - 2 \cdot 2,73 \text{ cm}}{14 \text{ cm}} \quad \checkmark$$

$$\overline{DC} = \frac{7 \text{ cm} \cdot 8,54 \text{ cm}}{14 \text{ cm}} = 4,27 \text{ cm} \quad \checkmark$$

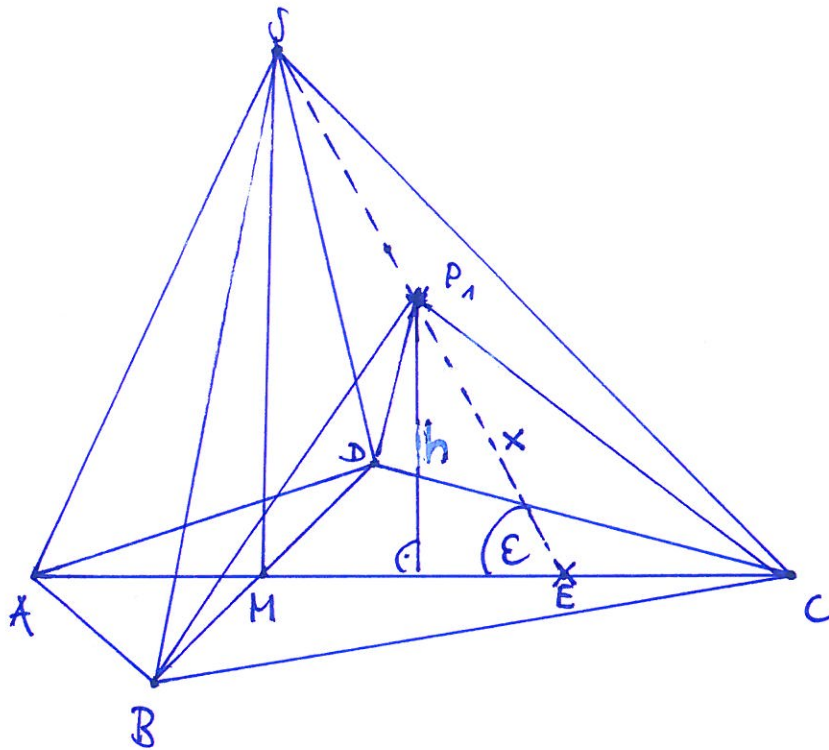
$$V_{\text{Spitze}} = \frac{1}{3} \cdot (2,14 \text{ cm})^2 \cdot \pi \cdot 8,54 \text{ cm} = 40,96 \text{ cm}^3 \quad \checkmark$$

$$\begin{aligned} V_{\text{Kegelstumpf}} &= 179,59 \text{ cm}^3 - 40,96 \text{ cm}^3 \\ &= 138,63 \text{ cm}^3 \quad \checkmark \end{aligned}$$

$$p = \frac{85,23 \text{ cm}^3}{138,63 \text{ cm}^3} \cdot 100\% = 61,48\% \quad \checkmark$$

(6)

2.1



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(2)

$$2.2. \quad \overline{ME} = \overline{AE} - \overline{AM} = 7\text{cm} - 3\text{cm} = 4\text{cm} \checkmark$$

$$\tan \epsilon = \frac{\overline{MS}}{\overline{ME}} = \frac{7\text{cm}}{4\text{cm}} \quad \epsilon = 60,26^\circ \checkmark$$

$$\overline{SE} = \sqrt{4^2 + 7^2} \text{ cm} = 8,06\text{cm} \checkmark$$

(2)

2.3. Zeichnung ✓

$$V(x) = \frac{1}{3} \cdot \frac{1}{2} \cdot \overline{BD} \cdot \overline{MC} \cdot h$$

$$\sin \epsilon = \frac{h}{x} \checkmark; \quad h = x \cdot \sin 60,26^\circ$$

$$h = 0,87 \cdot x \checkmark$$

$$V(x) = \frac{1}{6} \cdot 8 \cdot 7 \cdot 0,87x \text{ cm}^3 \checkmark$$

$$V(x) = 8,12 \cdot x \text{ cm}^3 \checkmark$$

(4)