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① h_p

$$V = G \cdot h$$

$$100 = 0,5 \cdot 5 \cdot 5 \cdot h$$

$$\underline{h = \frac{100}{0,5 \cdot 5^2} = 8 \text{ cm}}$$

② d

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

$$\underline{d = 7,07 \text{ cm}}$$

③ M_p

$$M = U \cdot h$$

$$= (5 + 5 + 7,07) \cdot 8$$

$$\underline{M_p = O_{2y} = 136,56 \text{ cm}^2}$$

④ G_{2y}

$$G = \pi \cdot r^2$$

$$= \pi \cdot 2,5^2$$

$$\underline{G = 19,63 \text{ cm}^2}$$

⑤ M_{2y}

$$O = 2 \cdot G + M$$

$$136,56 = 2 \cdot 19,63 + M$$

$$\underline{M = 97,3 \text{ cm}^2}$$

⑥ h_{2y}

$$M = 2 \cdot \pi \cdot r \cdot h$$

$$97,3 = 2 \pi \cdot 2,5 \cdot h$$

$$\underline{h = \frac{97,3}{2 \pi \cdot 2,5} = 6,19 \text{ cm}}$$

⑦ V_{2y}

$$V = \pi \cdot r^2 \cdot h$$

$$= \pi \cdot 2,5^2 \cdot 6,19$$

$$\underline{V = 121,54 \text{ cm}^3}$$

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① a

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

$$\underline{a = 7,07 \text{ cm}}$$

② h

$$M = U \cdot h$$

$$122 = (2 \cdot 7,07 + 10) \cdot h$$

$$\underline{h = \frac{122}{2 \cdot 7,07 + 10} = 5,05 \text{ cm}}$$

③ V_p

$$V = G \cdot h$$

$$= 0,5 \cdot 7,07^2 \cdot 5,05$$

$$\underline{V = 126,21 \text{ cm}^3}$$

④ r_{HK}

$$V = \frac{1}{2} \cdot \frac{4}{3} \cdot \pi \cdot r^3$$

$$126,21 = \frac{1}{2} \cdot \frac{4}{3} \cdot \pi \cdot r^3$$

$$\Rightarrow \underline{r = \sqrt[3]{\frac{126,21}{\frac{1}{2} \cdot \frac{4}{3} \cdot \pi}} = 3,92 \text{ cm}}$$