

8) a)

① V_{Zyl}

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

$$= \pi \cdot 3^2 \cdot 5$$

$$\underline{V = 141,37 \text{ cm}^3}$$

② V_K

$$V_K = \frac{141,37}{2}$$

$$\underline{V_K = 70,69 \text{ cm}^3}$$

③ r_K

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

$$70,69 = \frac{4}{3} \pi \cdot r^3$$

$$\underline{r = \sqrt[3]{\frac{70,69}{\frac{4}{3} \cdot \pi}} = 2,57 \text{ cm}}$$

6) ① M_{Zyl}

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

$$= 2 \pi \cdot 3 \cdot 5$$

$$\underline{M = 94,25 \text{ cm}^2}$$

② M_w

$$M_w = 2 \cdot 94,25$$

$$\underline{M_w = 188,5 \text{ cm}^2}$$

③ Per a

$$M = 4 \cdot a^2$$

$$188,5 = 4 \cdot a^2$$

$$\underline{a = \sqrt{\frac{188,5}{4}} = 6,86 \text{ cm}}$$

c) ① O_{Zyl}

$$O = 2 \cdot \pi \cdot r^2 + 2 \pi \cdot r \cdot h$$

$$= 2 \cdot \pi \cdot 3^2 + 94,25$$

$$\underline{O = 150,8 \text{ cm}^2}$$

② r_{HK}

$$O = 3 \pi \cdot r^2$$

$$150,8 = 3 \pi \cdot r^2$$

$$\underline{r = \sqrt{\frac{150,8}{3 \pi}} = 4 \text{ cm}}$$

9)

① r_K

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

$$113000 = \frac{4}{3} \pi \cdot r^3$$

$$\underline{r = \sqrt[3]{\frac{113000}{\frac{4}{3} \cdot \pi}} = 30 \text{ cm}}$$

② h_Z

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

$$113000 = \pi \cdot 15^2 \cdot h$$

$$\underline{h = \frac{113000}{\pi \cdot 15^2} = 159,9 \text{ cm} = 15,99 \text{ dm}}$$