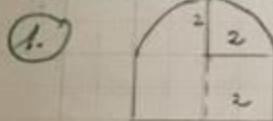
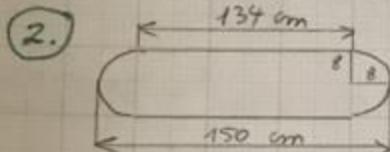


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$$t = 2 \quad h_{\text{rest}} = 4 \text{ cm}$$

$$V = \frac{1}{2} \cdot \frac{4}{3} \pi \cdot 2^3 + \pi \cdot 2^2 \cdot 4 = \approx 67 \text{ cm}^3$$

$$A = A_{\text{HK}} + A_{\text{rest}} = 2\pi \cdot 2^2 + 2\pi \cdot 2 \cdot 4 = 24\pi = 75,4 \text{ cm}^2$$



$$V = \frac{4}{3} \pi \cdot 8^3 + \pi \cdot 8^2 \cdot 134 = 29087 \text{ cm}^3 \\ = 29,087 \text{ l}$$

3.) $t_1 = 10,82 \text{ cm}$
 $V_1 = 5309,77 \text{ cm}^3$
 a) $\frac{100\%}{V_2} = \frac{x}{V_1}$

$$t_2 = 11,14 \text{ cm}$$

$$V_2 = 5792,19 \text{ cm}^3$$

$$x = 91,67 \% \rightarrow \underline{\text{um } 8,33\%}$$

$$6.) A_0(400) = 588746 \\ +25\% \rightarrow 735932 \text{ cm}^2$$

$$A_0(400) = 623887 \\ +25\% = 779859 \text{ cm}^2$$

$$\text{Diff.: } 43926,8 \text{ cm}^2 = \underline{4,39 \text{ m}^2} \text{ pro Tag}$$

4.) $t_1 = 2,5 \text{ cm}$ 8 Kugeln: $A_0 = 628,319 \text{ cm}^2$

$$V = 8 \cdot \frac{4}{3} \pi \cdot 2,5^3 = 523,599 \text{ cm}^3 = \frac{4}{3} \pi \cdot r^3 \rightarrow t_2 = 5$$

$$1 \text{ gr. Kugel: } A_0 = 4 \cdot \pi \cdot 5^2 = 314,159 \text{ cm}^2$$

5.) A_0 d. 8 Kugeln doppelt so groß, wie A_0 von 1 gr. Kugel

5.) nur auf 1 Kugel: A_0 als Röhre verkleben
 $h = 10 \mu\text{m} = 10 \cdot 10^{-6} \text{ m} = \underline{\underline{10^{-5} \text{ m}}} \\ = 10^{-3} \text{ mm}$

$$A_0: \text{Quadrat: } 2 \cdot 5^2 + 4 \cdot 5 \cdot 10 = 250 \text{ cm}^2$$

$$\text{Auf 1 Kugel: } r = 3,7 : 2\pi \cdot 3,7^2 = 86,02$$

$$\text{Fläche HK: } t = 3 : 2\pi \cdot 3^2 = 181 \approx 56,55$$

$$\text{Kleinring: } r_1 = 3,7, r_2 = 3 : \pi (3,7^2 - 3^2) = 14,73$$

$$V = A \cdot 10^{-3} = 0,4073 \text{ cm}^3 \underline{\underline{= 7869}}$$

7.) $V_{\text{ges}} = \frac{1}{2} \cdot \frac{4}{3} \pi \cdot 4,3^3 + \sqrt{3} \cdot 6^2 \cdot 6 = 727,7 \text{ mm}^3$

$$\text{Bohrung: } V_8 = \pi \cdot 2,5^2 \cdot 7 = 137,44$$

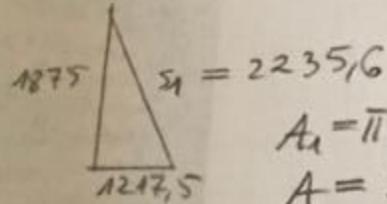
$$\frac{100\%}{727,7} = \frac{x}{137,44} \quad x = \underline{\underline{18,9\%}}$$



frmelz

HDI
GERLING

8.



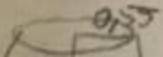
$$s_1 = 2235,6$$

$$A_1 = \pi \cdot r \cdot s = 8550,942 \text{ mm}^2$$
$$A = 207929,21 \text{ mm}^2 = \underline{\underline{20,8 \text{ m}^2}}$$

$$s_2 = 3200,6$$

$$A_2 = 12241979 \text{ mm}^2$$

9.)



$$V = \frac{4}{3} \pi \cdot 0,07 \cdot (0,55^2 + 0,55 \cdot 1,15 + 1,15^2)$$