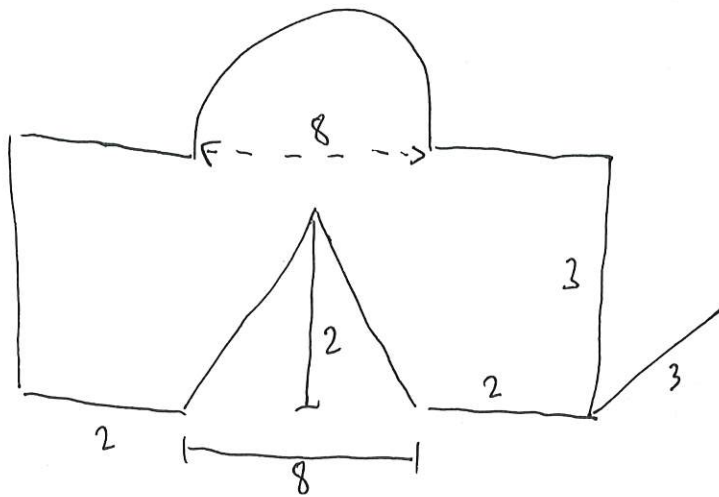


Kugel + Kugel

①



$$m = V \cdot \rho$$

$$V = G \cdot h = [\text{Rechteck} - \Delta + \text{Dreieck}] \cdot 3 \text{ cm}$$

$$V = \left[12 \text{ cm} \cdot 3 \text{ cm} - \frac{8 \text{ cm} \cdot 2 \text{ cm}}{2} + \frac{(4 \text{ cm})^2 \cdot \pi}{2} \right] \cdot 3 \text{ cm}$$

$$\underline{V} = [36 \text{ cm}^2 - 8 \text{ cm}^2 + 25 \cdot 13 \text{ cm}^2] \cdot 3 \text{ cm} \approx \underline{159.40 \text{ cm}^3}$$

$$\rightarrow \underline{m} = 159.40 \text{ cm}^3 \cdot 8.7 \frac{\text{g}}{\text{cm}^3} \approx \underline{1386.76 \text{ g}}$$

② $V = \frac{G + 4Z + D}{6} \cdot h$

Kugel: $G = D = 0$
 $Z = \pi r^2$
 $h = 2 \cdot r$

$$V = \frac{0 + 4 \cdot \pi r^2 + 0}{6} \cdot 2r$$

$$\underline{V} = \frac{8\pi r^3}{6} = \frac{4\pi r^3}{3} = V_{\text{Kugel}}$$

$$3) S = 4\pi r^2 \rightarrow r = \sqrt{\frac{S}{4\pi}} = \sqrt{\frac{460.2 \cdot 10^6 \text{ km}^2}{4\pi}} \approx \underline{\underline{6051.57 \text{ km}}}$$

Venus
 Schätzung: 8000 km
 Differenz: 1948.43 km
 in % = $\frac{1948.43 \text{ km}}{6051.57 \text{ km}} \cdot 100\% \approx \underline{\underline{32.20\%}}$ zu hoch

Erde
 $V = \frac{4 \cdot \pi r^3}{3} \rightarrow r = \sqrt[3]{\frac{3V}{4\pi}} = \sqrt[3]{\frac{3 \cdot 10^{12} \text{ km}^3}{4\pi}} \approx \underline{\underline{6364.71 \text{ km}}}$

$S = 4 \cdot \pi \cdot r^2 \approx \underline{\underline{509'057'251.3 \text{ km}^2}}$

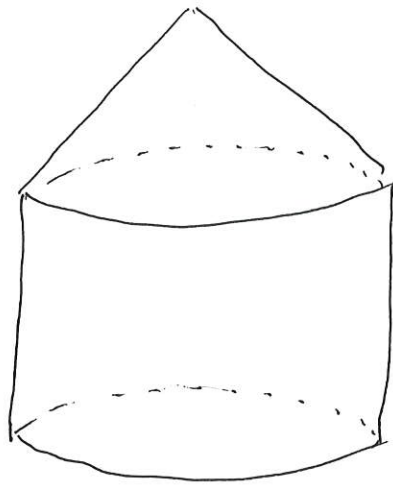
		Flächen	Edgen	Kanten	ander Körper
4)	A) Dodekaeder	12	20	30	Icosaeder
	B) Icosaeder	20	12	30	Dodekaeder
	C) Oktaeder	8	6	12	Würfel (Hexaeder)

5) $10 \text{ L} \cong 10'000 \text{ cm}^3$
 $S = 4 \cdot \pi \cdot r^2 \rightarrow r = \sqrt{\frac{S}{4\pi}} = \sqrt{\frac{115 \text{ cm}^2}{4 \cdot \pi}} \approx \underline{\underline{3.03 \text{ cm}}}$

$V = \frac{4 \pi r^3}{3} = \frac{4 \cdot \pi \cdot (3.03 \text{ cm})^3}{3} \approx \underline{\underline{115.96 \text{ cm}^3}}$

Anzahl = $\frac{10'000 \text{ cm}^3}{115.96 \text{ cm}^3} \approx 86.23 \rightarrow \underline{\underline{86 \text{ Kupfer G's}}}$

6) a)



$$b) V = V_{\text{Zyl}} + V_{\text{Kegel}}$$

$$\underline{V_{\text{Zyl}}} = r^2 \cdot \pi \cdot h = r^2 \cdot \pi \cdot r = r^3 \cdot \pi = (32.5 \text{ cm})^3 \cdot \pi \approx \underline{\underline{107'844.99 \text{ cm}^3}}$$

$$\underline{V_{\text{Kegel}}} = \frac{r^2 \cdot \pi \cdot h}{3} = \frac{(32.5 \text{ cm})^2 \cdot \pi \cdot 16.25 \text{ cm}}{3} \approx \underline{\underline{17'974.16 \text{ cm}^3}}$$

$$\underline{\underline{+}} \\ \underline{\underline{V_{\text{Total}}}}$$

$$\underline{\underline{+}} \\ \underline{\underline{125'819.15 \text{ cm}^3}}$$

$$c) V = \frac{4 \cdot \pi \cdot r^3}{3} \rightarrow r = \sqrt[3]{\frac{3 \cdot V}{4 \cdot \pi}}$$

$$\underline{\underline{r}} = \sqrt[3]{\frac{3 \cdot 125'819.15 \text{ cm}^3}{4 \cdot \pi}} \approx \underline{\underline{31.09 \text{ cm}}}$$



Liebe Grüße!