

3. Bez

Pyramide / Kegel

Lösungen AB 4

1

$$r = \frac{3}{4} \cdot 5 = 3,75$$

$$h = \sqrt{5^2 - 3,75^2} = 3,307 \dots$$

$$V = \frac{r^2 \cdot \pi \cdot h}{3} = \underline{\underline{48,7}}$$

2

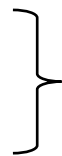
$$V = \frac{1}{3} l = \underline{\underline{3,3 \text{ dl}}}$$

3

$$l_1 = 2 \cdot l_2$$

$$h_1 = 2 \cdot h_2$$

$$r_1 = 2 \cdot r_2$$



alle Längen sind halb so gross

$$V_1 = \frac{r_1 \cdot r_1 \cdot \pi \cdot h_1}{3}$$

$$V_2 = \frac{\frac{r_1}{2} \cdot \frac{r_1}{2} \cdot \pi \cdot \frac{h_1}{2}}{3} = \frac{1}{8} \cdot \frac{r_1 \cdot r_1 \cdot \pi \cdot h_1}{3} = \frac{1}{8} \cdot V_1 = 12,5\% \cdot V_1$$

$$V_{\text{Rest}} = \underline{\underline{87,5\%}} \text{ von } V_1$$

4

r	h	s	V	M	O
4	3	5	50,3	62,8	113,1

5

$$r = \frac{u}{2\pi} = \underline{\underline{0,7m}}$$

$$V = r^2 \cdot \pi \cdot h = \underline{\underline{2,77m^3}}$$

$$M = u \cdot h = \underline{\underline{7,92m^2}}$$

$$O = 2G + M = 2 \cdot r^2 \cdot \pi + M = \underline{\underline{11m^2}}$$

6

$$r = \frac{d}{2} = 6,4cm$$

$$V = r^2 \cdot \pi \cdot h = \underline{\underline{2381cm^3}}$$

$$M = u \cdot h = 2r\pi \cdot h = \underline{\underline{744cm^2}}$$

7

$$r = \frac{d}{2} = 5cm$$

$$V = 1000cm^3$$

$$h = \frac{V}{r^2 \cdot \pi} = 12,73cm$$

$$M = u \cdot h = 2r\pi \cdot h = \underline{\underline{400cm^2}}$$

8

$$r = \frac{d}{2} = 30,5cm$$

$$G = r^2 \cdot \pi = 2922cm^2$$

$$O_{ein\ Fass} = \frac{71m^2}{32} = 22187,5cm^2$$

$$M = O_{ein\ Fass} - 2 \cdot G = 16342,6cm^2$$

$$h = \frac{M}{u} = \frac{M}{2r\pi} = \underline{\underline{85,3cm}}$$

9

$$r = \frac{d}{2} = 2,6cm$$

$$h = \frac{M}{u} = \frac{M}{d\pi} = 5,12cm$$

$$V = r^2 \cdot \pi \cdot h = \underline{\underline{108,81cm^3}}$$

10

$$r = \frac{d}{2} = \frac{x}{4}$$

$$V = r^2 \cdot \pi \cdot h = \left(\frac{x}{4}\right)^2 \cdot \pi \cdot 4x = \frac{x^2 \cdot \pi \cdot 4x}{16} = \underline{\underline{\frac{x^3 \cdot \pi}{4}}}$$

11

$$O = 2G + M = 2 \cdot r^2 \cdot \pi + 2r\pi \cdot h = 2x^2\pi + 2x \cdot \pi \cdot 2x = 2x^2\pi + 4x^2\pi = \underline{\underline{6x^2\pi}}$$