4. Stereometrie

27. $a : b : c = 1 : 2 : 3$

$x \quad 2x \quad 3x$

$V = a \cdot b \cdot c$

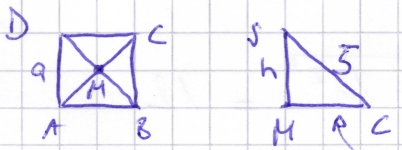
$1 = x \cdot 2x \cdot 3x = 6x^3$

$x^3 = \frac{1}{6} \Rightarrow x = 0.55\,m$

$a = 0.55,\ b = 1.1,\ c = 1.65$

28. $G = 30\,cm$

$a = \sqrt{30}$



$\overline{AC} = \sqrt{30+30} \rightarrow \overline{MC} = \frac{1}{2}\sqrt{60} = 3.87\,cm$

$h = \sqrt{5^2 - (3.87)^2} = 3.16\,cm$

$V = \frac{1}{3} \cdot G \cdot h = 31.6\,cm^3$

$A = 4.18$

$O = 30 + 4 \times \triangle$

$= 30 + 4 \times \frac{\sqrt{30} \cdot 4.18}{2} = 75.83\,cm^2$

29.

$b = \frac{2\pi r \cdot 216}{360} = 18.85\,cm$

$u = b = 18.85 = 2\pi r$

$r = 3\,cm$

$h = \sqrt{5^2 - 3^2} = 4$

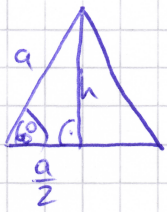
$V = \frac{1}{3} \cdot G \cdot h = 37.7\,cm^3$

$O = \frac{\pi \cdot 25 \cdot 216}{360} + \pi \cdot 3^2 = 75.4\,cm^2$

30 $V = \frac{1}{3} \cdot G \cdot h = \frac{1}{3} \cdot 3^2 \cdot 4 = 12\,E^3$

$O = 3 \cdot 3 + 2 \cdot \frac{3 \cdot 4}{2} + 2 \cdot \frac{5 \cdot 3}{2} = 36\,E^2$

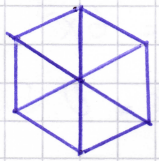
31.

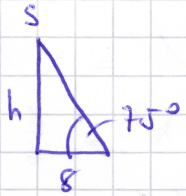


$h = \sqrt{a^2 - \left(\frac{a}{2}\right)^2} = \frac{\sqrt{3}}{2}a$

$\sin(60°) = \frac{h}{a} = \frac{\sqrt{3}}{2}$

32. $a = 8cm$





$\tan(75°) = \frac{h}{8} \Rightarrow h = 29.86cm$

$G = 6 \times \Delta = 6 \times 16\sqrt{3}$

$V = \frac{1}{3} \cdot 6 \cdot h = 1654.81 cm^3$

33. $\sqrt{20^2 - 16^2} = 12$

$V_P = \frac{1}{3} \cdot 6 \cdot h = \frac{1}{3} \cdot 24^2 \cdot 16 = 3072$

$V_{\ominus} = \frac{1}{2} \cdot \pi \cdot r^2 \cdot 24 = 5428.67$ (r = 12)

$V = 8500.67 cm^3$