MAGJ3 Avaruusgeometria — Kertaustehtäviä

K1

A	Ympyräkartio	F	(nelisivuinen) pyramidi
B	Ympyrälieriö	G	Kuutio (suorak. särmiö)
C	Suorakulmainen särmiö	H	(kolmisivuinen) särmiö
D	Puolipallo	I	Pallo
E	Ympyrälieriö	J	Kala

K2

a) $V = A_p \cdot h$
$= 22\,cm^2 \cdot 6{,}6\,cm$
$= 145{,}2\,cm^3$
$\approx 150\,cm^3$

b) $V = A_p \cdot h$
$= 68{,}3\,cm^2 \cdot 16{,}0\,cm$
$= 1092{,}8\,cm^3$
$\approx 1090\,cm^3$

c) $V = \frac{A_p \cdot h}{3} = \frac{81{,}7\,m^2 \cdot 13{,}6\,cm}{3} = 370{,}3\ldots\,cm^3 \approx 370\,cm^3$

K3

a) $V = a \cdot b \cdot c$
$= 6{,}0\,cm \cdot 3{,}0\,cm \cdot 4{,}0\,cm$
$= 72\,cm^3$

b) $V = \pi \cdot r^2 \cdot h$
$= \pi \cdot (3{,}0\,cm)^2 \cdot 3{,}0\,cm$
$= 84{,}8\ldots\,cm^3$
$\approx 85\,cm^3$

c) $V = \frac{A_p \cdot h}{3} = \frac{5{,}4\,m \cdot 5{,}4\,m \cdot 4{,}5\,m}{3} = 43{,}74\,m^3 \approx 44\,m^3$

d) $V = \frac{\pi \cdot r^2 \cdot h}{3} = \frac{\pi \cdot (5{,}7\,m)^2 \cdot 9{,}0\,m}{3} = 306{,}2\ldots\,m^3 \approx 310\,m^3$

K4

a) $V = \frac{4 \cdot \pi \cdot r^3}{3} = \frac{4 \cdot \pi \cdot (45\,mm)^3}{3} = 381703{,}5\ldots\,mm^3 \approx 380\,000\,mm^3$

b) $A_p = \frac{9{,}0\,cm \cdot 9{,}0\,cm}{2} = 40{,}5\,cm^2$

$V = \frac{A_p \cdot h}{3} = \frac{40{,}5\,cm^2 \cdot 12{,}0\,cm}{3} = 162\,cm^3 \approx 160\,cm^3$

K5

a) $4{,}0\ \text{km} = 4000\ \text{m}$

b) $5{,}3\ \text{m} = 530\ \text{cm}$

c) $459\ \text{mm} = 45{,}9\ \text{cm}$

d) $2{,}5\ \text{m}^2 = 25\,000\ \text{cm}^2$

e) $83\,900\ \text{cm}^2 = 8{,}39\ \text{m}^2$

f) $1\,900\ \text{ha} = 19\ \text{km}^2$

g) $1{,}2\ \text{m}^3 = 1200\ \text{dm}^3$

h) $22\ \text{cm}^3 = 22\,000\ \text{mm}^3$

i) $430\,200\ \text{cm}^3 = 430{,}2\ \text{dm}^3$

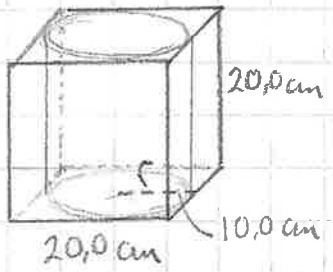
j) $7{,}8\ \text{dm}^3 = 7{,}8\ \text{l}$

k) $2{,}2\ \text{m}^3 = 2200\ \text{l}$

l) $56\ \text{l} = 560\ \text{dl}$

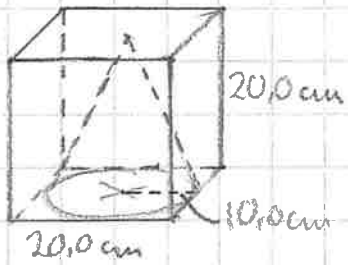
K6

a)



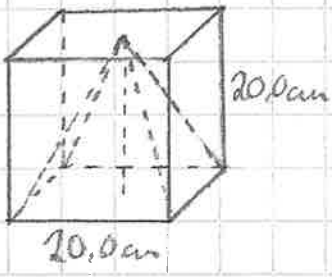
$$V = \pi \cdot r^2 \cdot h$$
$$= \pi \cdot (10{,}0\ \text{cm})^2 \cdot 20{,}0\ \text{cm}$$
$$= 6283{,}18\ldots\ \text{cm}^3$$
$$\approx 6280\ \text{cm}^3$$

b)



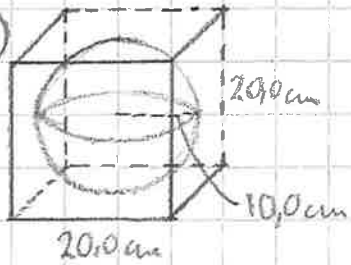
$$V = \frac{\pi \cdot r^2 \cdot h}{3} = \frac{\pi \cdot (10{,}0\ \text{cm})^2 \cdot 20{,}0\ \text{cm}}{3}$$
$$= 2094{,}3\ldots\ \text{cm}^3$$
$$\approx 2090\ \text{cm}^3$$

c)



$$V = \frac{A_p \cdot h}{3} = \frac{20{,}0\ \text{cm} \cdot 20{,}0\ \text{cm} \cdot 20{,}0\ \text{cm}}{3}$$
$$= 2666{,}66\ldots\ \text{cm}^3$$
$$\approx 2670\ \text{cm}^3$$

d)



$$V = \frac{4 \cdot \pi \cdot r^3}{3} = \frac{4 \cdot \pi \cdot (10.0\ \text{cm})^3}{3}$$
$$= 4188{,}7\ldots\ \text{cm}^3$$
$$\approx 4190\ \text{cm}^3$$

e) Ympyrälieriön muotoinen esine.