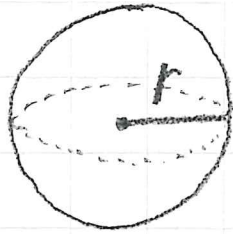


s.32

Pallo

tilavuus

$$V = \frac{4\pi r^3}{3}$$

94

s.33

$$a) V = \frac{4 \cdot 3,14 \cdot 5\text{cm} \cdot 5\text{cm} \cdot 5\text{cm}}{3}$$

$$= 523,33... \text{cm}^3 \approx 520 \text{cm}^3$$

$$b) \begin{array}{l} \text{halkaisija} \\ d = 12\text{m} \end{array} \quad \begin{array}{l} \text{säde} \\ r = \frac{12\text{m}}{2} = 6\text{m} \end{array}$$

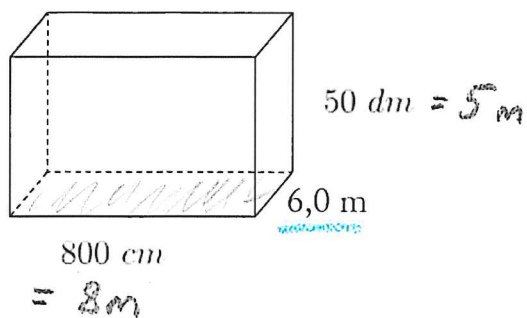
$$V = \frac{4 \cdot 3,14 \cdot 6\text{m} \cdot 6\text{m} \cdot 6\text{m}}{3}$$

$$= 904,32 \text{m}^3 \approx 900 \text{m}^3$$

$$c) V = \frac{4 \cdot 3,14 \cdot 7\text{mm} \cdot 7\text{mm} \cdot 7\text{mm}}{3}$$

$$= 1436,026... \text{mm}^3 \approx 1400 \text{mm}^3$$

1. Laske kappaleiden tilavuudet. Kuinka monta **litraa** on kappaleiden tilavuus?

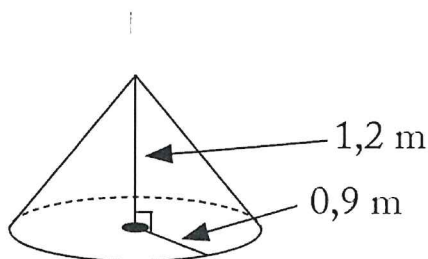


$$V = 8 \text{ m} \cdot 6 \text{ m} \cdot 5 \text{ m}$$

$$= 240 \text{ m}^3$$

$$= 240\,000 \text{ dm}^3$$

$$= 240\,000 \text{ litraa}$$



$$V = \frac{3,14 \cdot 0,9 \text{ m} \cdot 0,9 \text{ m} \cdot 1,2 \text{ m}}{3}$$

$$= 1,01736 \text{ m}^3$$

$$\approx 1,0 \text{ m}^3$$

$$= 1000 \text{ dm}^3$$

$$= 1000 \text{ l}$$

2. Rikas mies haluaa valmistaa kultaisen golf-pallon. Pallon **halkaisija** on 42,7 mm.

a) Mikä on pallon tilavuus?

$$r = \frac{42,7 \text{ mm}}{2} = 21,35 \text{ mm}$$

$$V = \frac{4 \cdot 3,14 \cdot 21,35 \text{ mm} \cdot 21,35 \text{ mm} \cdot 21,35 \text{ mm}}{3}$$

$$= 40\,743,8461 \text{ mm}^3 \approx 40\,700 \text{ mm}^3$$

b) Kuinka paljon pallo painaa, eli mikä on kappaleen massa?

Kullan tiheys on  $19,3 \text{ g/cm}^3$ .

$$= 40,7 \text{ cm}^3$$

$$\text{massa} = \text{tiheys} \cdot \text{tilavuus}$$

$$19,3 \frac{\text{g}}{\text{cm}^3} \cdot 40,7 \text{ cm}^3 = 785,51 \text{ g}$$

$$\approx 786 \text{ g}$$