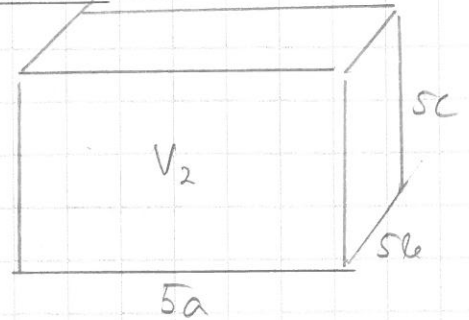
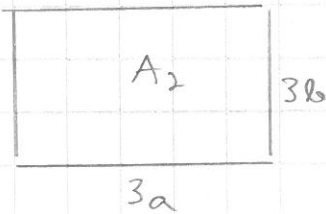
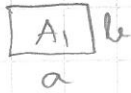


jane AB pöytä on muuttamassa:

$$\frac{y}{z} = \frac{\frac{32}{5}}{\frac{18}{5}} = \frac{32}{5} \cdot \frac{5}{18} = \frac{32}{18} = \frac{16}{9}$$

4. Pinta-alojen ja tilavuuksien suhte

Esim.



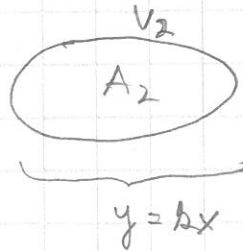
$$\frac{A_2}{A_1} = \frac{3a \cdot 3b}{a \cdot b} = 9 = 3^2$$

↑
mittakaava

$$\frac{V_2}{V_1} = \frac{5a \cdot 5b \cdot 5c}{a \cdot b \cdot c} = 125 = 5^3$$

↑
mittakaava

Yleisesti:



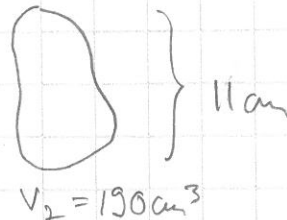
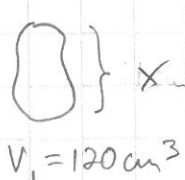
$$\frac{A_2}{A_1} = \left(\frac{y}{x}\right)^2 = k^2$$

$$\frac{V_2}{V_1} = \left(\frac{y}{x}\right)^3 = k^3$$

Sis: Yhdennäköisten kappaleiden (kappaleiden) pinta-alojen suhte = mittakaavan neliö 6½

Yhdennäköisten kappaleiden tilavuuksien suhte = mittakaavan kuutio 8

4.3

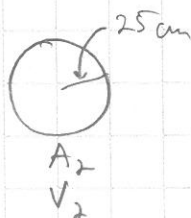


$$\frac{V_1}{V_2} = \left(\frac{x}{11 \text{ cm}}\right)^3 = \frac{120}{190} \quad | \sqrt[3]{}$$

$$\Rightarrow \frac{x}{11 \text{ cm}} = \sqrt[3]{\frac{120}{190}} \quad | \cdot 11 \text{ cm}$$

$$\Rightarrow x = 11 \text{ cm} \cdot \sqrt[3]{\frac{120}{190}} \approx 9,438 \text{ cm} \approx \underline{9,4 \text{ cm}}$$

4.5



$$a) \frac{A_2}{A_1} = k^2 = \left(\frac{25 \text{ cm}}{15 \text{ cm}}\right)^2 \approx 2,7778$$

$$\Rightarrow \text{isäntä: } 2,7778 - 1 = 1,7778 \approx \underline{180\%}$$