

3.5 gemengde afsluitende rekenopdrachten

Opdracht 11

$$m_{\text{opgeloste stof}} = V_{\text{oplossing}} \times c; V = 6\text{L} = 60\text{ dL}$$

$$m_{\text{opgeloste stof}} = 60 \times 18 = 1080\text{ mg}; 1080\text{ mg} = 1,08\text{ g}$$

Opdracht 12

$$\text{Inhoud cilinder} = \pi \times r^2 \times h; \text{diameter} = 2 \times r$$

$$0,1\text{ L} = 0,1\text{ dm}^3 = 100\text{ cm}^3$$

$$100 = \pi \times r^2 \times 8; \pi \times r^2 = 100 / 8 = 12,5$$

$$r^2 = 12,5 / \pi = 3,98\text{ cm}^2$$

$$r = \sqrt{3,98} = 1,99\text{ cm}$$

$$d = 2 \times r = 2 \times 1,99 = 3,99\text{ cm}$$

Opdracht 13

$$\text{Inhoud aquarium} = l \times b \times h = 2 \times 3 \times (4/5 \times 2) = 2 \times 3 \times 1,6 = 9,6\text{ m}^3$$

$$9,6\text{ m}^3 = 9600\text{ dm}^3 = \mathbf{9600\text{ L}}$$

Per liter is er 34,5 g zout nodig.

$$\text{Massa zout} = 9600 \times 34,5 = 331200\text{ g zout.}$$

$$331200\text{ g} = \mathbf{331,2\text{ kg zout.}}$$

Opdracht 14

$$\rho = m_{\text{legering}} / V_{\text{legering}}$$

$$m_{\text{legering}} = \text{massa zilver} + \text{massa goud} = 210 + 579 = 789\text{ g}$$

$$V_{\text{legering}} = \text{volume zilver} + \text{volume goud (gegeven in de tekst)}$$

$$V_{\text{zilver}} = m_{\text{zilver}} / \rho_{\text{zilver}} = 210 / 10,5 = 20\text{ cm}^3$$

$$V_{\text{goud}} = m_{\text{goud}} / \rho_{\text{goud}} = 579 / 19,3 = 30\text{ cm}^3$$

$$V_{\text{legering}} = 20 + 30 = 50\text{ cm}^3$$

$$\rho = m_{\text{legering}} / V_{\text{legering}} = 789 / 50 = 15,78\text{ g/cm}^3$$