



Mõõtmine Kordamine kontrolltöök

Füüsika
8 klass
Antsla Gümnaasium



Tihedus

21.11

Tihedus - füüsikaline suurus, mis näitab ühikulisel ruumalal keha massi.

$$m(\text{Fe}) = 1 \text{ kg}$$

$$m(\text{vatt}) = 1 \text{ kg}$$

Möötmine

kandset

arvutamiseks

$$\rho = \frac{m}{V}$$

otseselt

AREOMEETER

Ute tihedus on $1000 \frac{\text{kg}}{\text{m}^3}$ v\u00f5i

$$\frac{1 \text{ g}}{\text{cm}^3}$$

$$\rho = \frac{m}{V}$$

mass (kg)

ruumala (m^3)

tihedus ($\frac{\text{g}}{\text{cm}^3}, \frac{\text{kg}}{\text{m}^3}$)

$$\rho = \frac{m}{V} \Rightarrow V = \frac{m}{\rho}$$

$$\rho = \frac{m}{V} \Rightarrow m = \rho \cdot V$$

Arin bhedus on $300 \frac{\text{kg}}{\text{m}^3}$. Kirjuta se
fisisika kulus.

$$\rho = 300 \frac{\text{kg}}{\text{m}^3}, \text{ n\u00e4italo et } 1 \text{ m}^3$$

Arin mass on 300 kg

$$300 \frac{\text{kg}}{\text{m}^3} = \frac{300 \text{ kg}}{1 \text{ m}^3}$$

$$5 \frac{\text{km}}{\text{h}},$$

Airne tihedus on $900 \frac{\text{kg}}{\text{m}^3}$. Kirjutage

See füüsika kulus. Millise ainega

on tegemist.

Kui suur on aine ruumala,

kui mass on 200 g

Selles aines võib olla:

1) jää

2) parafin

$$\frac{\text{obalmed}}{\rho = 900 \frac{\text{kg}}{\text{m}^3}}$$

1 m^3 aine mass 900 kg.
 1 m^3 - 900 kg
x - 0,2 kg

$$1 \text{ m}^3 - 900 \text{ kg}$$

$$\times \cancel{1} 0,2 \text{ kg}$$

$$X > \frac{1 \text{ m}^3 - 0,2 \text{ kg}}{900 \text{ kg}}$$

$$= 2,2 \cdot 10^{-4} \text{ m}^3$$

II

$$m = 200 \text{ g} = 0,2 \text{ kg}$$
$$\rho = 900 \text{ kg/m}^3$$
$$V = ?$$

$$\rho = \frac{m}{V} \Rightarrow$$

$$V = \frac{m}{\rho}$$

$$V = \frac{0,2 \text{ kg}}{900 \frac{\text{kg}}{\text{m}^3}} = \underline{\underline{2,2 \cdot 10^{-4} \text{ m}^3}}$$

$900 \frac{\text{kg}}{\text{m}^3}$ 1m^3 jää mass on 900 kg.

$13600 \frac{\text{kg}}{\text{m}^3}$ 1m^3 H₂O mass on 13600 kg

$200 \frac{\text{g}}{\text{cm}^3}$ 1cm^3 aihe mass on 200g.

Ül. Mida näitab aine tihedus

$2700 \frac{\text{kg}}{\text{m}^3}$. Millise ainega on tegemist? Kui suur on 500 cm^3 sellise aine mass?

Aine on AL (lp)

1 m^3 aine mass 2700 kg

$$\rho = 2400 \frac{\text{kg}}{\text{m}^3} = 2,4 \frac{\text{g}}{\text{cm}^3} \quad \rho = \frac{m}{V} \Rightarrow \underline{m = \rho \cdot V}$$

$$V = 500 \text{ cm}^3$$

$$m = ?$$

$$m = 2,4 \frac{\text{g}}{\text{cm}^3} \cdot 500 \text{ cm}^3$$

$$= 1350 \text{ g} = \underline{\underline{1,350 \text{ kg}}}$$

$$\rho = 2,7 \frac{\text{g}}{\text{cm}^3}$$

$$V = 500 \text{ cm}^3$$

$$m = ?$$

$$\begin{array}{l} 1 \text{ cm}^3 - 2,7 \text{ g} \\ 500 \text{ cm}^3 - X \end{array}$$

$$X = \frac{500 \text{ cm}^3 \cdot 2,7 \text{ g}}{1 \text{ cm}^3} =$$

$$= 1350 \text{ g} = \underline{\underline{1,35 \text{ kg}}}$$

Aihe tiheus on $10500 \frac{\text{kg}}{\text{m}^3}$ Mida see näitab?

1) Millise ainega on tegemist?

2) Kuu suur on kalle aine mass, kui ruumala on 600 cm^3 .

1) 1 m^3 aine mass on 10500 kg .

2) Ag - hõbe

3) Andmed.

$$\rho = 10500 \frac{\text{kg}}{\text{m}^3} = 10,5 \frac{\text{g}}{\text{cm}^3} \quad m = ?$$
$$V = 600 \text{ cm}^3$$

$$\rho = \frac{m}{V} \Rightarrow m = \rho \cdot V$$

$$m = 10,5 \frac{\text{g}}{\text{cm}^3} \cdot 600 \text{ cm}^3 =$$

$$= 6300 \text{ g} = 6,3 \text{ kg}$$

$$\text{II} \quad \rho = 10500 \frac{\text{kg}}{\text{m}^3} = 10,5 \frac{\text{g}}{\text{cm}^3}$$

$$V = 600 \text{ cm}^3$$

$$\begin{array}{l} 1 \text{ cm}^3 - 10,5 \text{ g} \\ 600 \text{ cm}^3 - X \end{array}$$

$$\begin{array}{l} X = 6300 \text{ g} = \\ = 6,3 \text{ kg} \end{array}$$

Tausendamine

$$1 \frac{\text{kg}}{\text{m}^3} = \frac{1 \cdot 1000}{1 \cdot 1000000}$$

$$\frac{\text{g}}{\text{cm}^3} =$$

$$1 \frac{\text{kg}}{\text{m}^3} = \frac{1}{1000} \frac{\text{g}}{\text{cm}^3}$$

$$5400 \frac{\text{kg}}{\text{m}^3} = \frac{5400 \cdot 1000}{1000000}$$

$$5,4 \frac{\text{g}}{\text{cm}^3}$$

$$1 \text{ m} = 100 \text{ cm}$$

$$1 \text{ m}^2 = 10000 \text{ cm}^2$$

$$1 \text{ m}^3 = 1000000 \text{ cm}^3$$

$$2500 \frac{\text{kg}}{\text{m}^3} = 2.5 \frac{\text{g}}{\text{cm}^3}$$

$$10.3 \frac{\text{g}}{\text{cm}^3} = 10300 \frac{\text{kg}}{\text{m}^3}$$

joonista ristkülik. Pikkus on 4 cm ja laius 3 cm. Arvuta ristküliku pindala ühikruudu meetodil. Ühe ruudu pindala on

$$a = 4 \text{ cm}$$

$$b = 3 \text{ cm}$$

$$1 \text{ cm}^2$$

$$P = 2(a + b)$$

$$P = 2(4 + 3) = 14 \text{ cm}$$

$$S = ab \quad S = 4 \cdot 3 = 12 \text{ cm}^2$$

Peisendamine.

$$7800 \frac{\text{kg}}{\text{m}^3} = 7,8$$

$$\frac{\text{g}}{\text{cm}^3}$$

$$5,4 \frac{\text{g}}{\text{cm}^3} = 5400$$

$$\frac{\text{kg}}{\text{m}^3}$$

Tausendamine

$$1 \frac{\text{kg}}{\text{m}^3} = \frac{1 \cdot \cancel{1000}}{\cancel{1000} \cancel{000}}$$

$$2000 \frac{\text{kg}}{\text{m}^3} = \frac{\cancel{2000} \cdot \cancel{1000}}{\cancel{1000} \cancel{000}} = 2 \frac{\text{g}}{\text{cm}^3}$$

$$\begin{aligned} \frac{\text{g}}{\text{cm}^3} &= \frac{1}{1000} \frac{\text{g}}{\text{cm}^3} = \\ &= 0,001 \frac{\text{g}}{\text{cm}^3} = 10^{-3} \frac{\text{g}}{\text{cm}^3} \\ 1 \text{ m} &= 100 \text{ cm} \\ 1 \text{ m}^3 &= (100)^3 = \\ &= (10^2)^3 = 10^6 \end{aligned}$$

Feisenclamine.

$$\rho(S_n) = 7300 \frac{\text{kg}}{\text{m}^3} \quad 1 \text{ m}^3 \text{ Sn mass on } 7300 \text{ kg}$$

$$\frac{7300 \text{ kg}}{1 \text{ m}^3} = \frac{7300 \cdot 1000}{1000000} = 7,3 \frac{\text{g}}{\text{cm}^3}$$

$$5,4 \frac{\text{g}}{\text{cm}^3} = 5400 \frac{\text{kg}}{\text{m}^3}$$

$$1 \text{ m} = 100 \text{ cm} = 10^2 \text{ cm}$$
$$1 \text{ m}^3 = (10^2)^3 = 10^6 \text{ cm}^3$$

Arwata 50 cm^3 vedeliku. mass, kui
vedeliku tihedus on $0,080 \frac{\text{g}}{\text{cm}^3}$.

I
Andmed.

$$V = 50 \text{ cm}^3$$

$$\rho = 0,080 \frac{\text{g}}{\text{cm}^3}$$

$$m = ?$$

$$\rho = \frac{m}{V} \Rightarrow$$

$$m = \rho \cdot V$$

$$m = 0,080 \frac{\text{g}}{\text{cm}^3} \cdot 50 \text{ cm}^3$$

$$= \underline{\underline{4 \text{ g}}} = \underline{\underline{0,004 \text{ kg}}}$$

$$\text{II } V = 50 \text{ cm}^3$$
$$\rho = 0.180 \frac{\text{g}}{\text{cm}^3}$$

$$1 \text{ cm}^3 = 0.180 \text{ g}$$
$$50 \text{ cm}^3 = X$$

$$X = \frac{50 \text{ cm}^3 \cdot 0.180 \text{ g}}{1 \text{ cm}^3} =$$

$$= \underline{\underline{4 \text{ g}}}$$

635 Kwi sumu on 1 cm^3 Pb $m = ?$.

$$\rho(\text{Pb}) = 11300 \frac{\text{kg}}{\text{m}^3} = 11,3 \frac{\text{g}}{\text{cm}^3}$$

Answered.

$$V = 1 \text{ cm}^3$$

$$\rho = 11,3 \frac{\text{g}}{\text{cm}^3}$$

$$m = ?$$

$$m = \rho V$$

$$m = 11,3 \frac{\text{g}}{\text{cm}^3} \cdot 1 \text{ cm}^3 =$$

$$= \underline{\underline{11,3 \text{ g}}}$$

6.36 Kera mass 01 kg ja rumala
I 400 cm³ . $\rho = ?$

Andmed

$$m = 1 \text{ kg} = 1000 \text{ g}$$

$$V = 400 \text{ cm}^3$$

$$\rho = ?$$

$$\rho = \frac{m}{V}$$

$$\rho = \frac{1000 \text{ g}}{400 \text{ cm}^3} =$$

$$= 2,5 \frac{\text{g}}{\text{cm}^3}$$

2,5 g/cm³

II, $1 \text{ cm}^3 = 1 \cdot 10^{-6} \text{ m}^3$ $1 \text{ m} = 100 \text{ cm} = 10^2 \text{ cm}$
 $1 \text{ m}^3 = (10^2)^3 = 10^6 \text{ cm}^3$

$$V = 400 \text{ cm}^3 = 400 \cdot 10^{-6} \text{ m}^3$$

$$m = 1 \text{ kg}$$
$$\rho = 72500 \frac{\text{kg}}{\text{m}^3}$$

$$\rho = \frac{m}{V}$$

$$\rho = \frac{1 \text{ kg}}{400 \cdot 10^{-6} \text{ m}^3} =$$
$$= \underline{\underline{2500 \frac{\text{kg}}{\text{m}^3}}}$$

Kui suur on alumiiniumitüki 1 mmala,
kui selle mass on $0,81 \text{ kg}$?

$$\rho = 2700 \text{ kg}:$$

$$m = 0,81 \text{ kg} \quad \frac{\text{kg}}{\text{m}^3}$$

$$V = ? \quad 3 \cdot 10^{-4} \text{ m}^3$$

Lahendus

$$\begin{array}{r} 1 \text{ m}^3 - 2700 \text{ kg} \\ x - 0,81 \text{ kg} \end{array}$$

$$\begin{aligned} x &= \frac{0,81 \text{ kg} \cdot 1 \text{ m}^3}{2700 \text{ kg}} \\ &= \underline{\underline{3 \cdot 10^{-4} \text{ m}^3}} \end{aligned}$$

$$\rho = \frac{m}{V} \Rightarrow V = \frac{m}{\rho}$$

$$V = \frac{0,81 \text{ kg}}{2700 \frac{\text{kg}}{\text{m}^3}} = 3 \cdot 10^{-4} \text{ m}^3$$

Täna tähelepanu eest!!!
Edukat õppimist !!!😊😊😊

