

358

Олимпиадная работа
по физике

ученика 10 20 класса

школы "СОШ" с.п.Туркестан

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N/2

Dave:

$$A_1 = 90 \text{ kcal/2}$$

$$V_1 = 15 \text{ kcal/2}$$

$V_{\text{top}} = ?$

Rebecca:

$$t_1 = \frac{S_1}{V_1} = \frac{25}{90}$$

$$t_2 = \frac{S}{2} = \frac{S}{325}$$

$$t = t_1 + t_2 = \frac{25}{325} + \frac{S}{325}$$

+
105

$$V_{\text{gr}} = \frac{325 \cdot 25}{25 + 225}$$

$$V_{\text{gr}} = \frac{3 \cdot 90 \text{ kcal/2} \cdot 15 \text{ kcal/2}}{90 \text{ kcal/2} + 15 \text{ kcal/2}} = 33.75 \text{ kcal/2}$$

Answer: $V_{\text{top}} = 33.75 \text{ kcal/2}$

N/4

Datum:

$$N_1 = 90 \text{ km/h}$$

$$N_2 = 15 \text{ km/h}$$

$N_{\text{op}} = ?$

Rechnung:

$$t_1 = \frac{S_1}{v_1} = \frac{25}{90}$$

$$t_2 = \frac{S}{v} = \frac{5}{30}$$

$$t = t_1 + t_2 = \frac{25}{90} + \frac{5}{30}$$

$$N_{\text{op}} = \frac{300 \cdot 25}{25 + 20}$$

$$N_{\text{op}} = \frac{3 \cdot 90 \text{ km/h} \cdot 15 \text{ km/h}}{90 \text{ km/h} + 15 \text{ km/h}} = 33,75 \text{ km/h}$$

Ergebnis: $N_{\text{op}} = 33,75 \text{ km/h}$

+
105

N/2

Dans:

$$M = 800 \text{ kg} = 0.8 \text{ t}$$

$$S = 150 \text{ Dm}^2$$

Receveur, $S = 60 \text{ m}^2 \rightarrow a = \sqrt[3]{\frac{S}{3}}$

$$V = a^3 = \left(\frac{\sqrt[3]{S}}{3}\right)^3$$

P. ?

$$P = \frac{M}{V} = \frac{M}{\left(\frac{\sqrt[3]{S}}{3}\right)^3}$$

$$P = \frac{800 \text{ kg}}{\left(\frac{\sqrt[3]{150}}{3}\right)^3} = 6,42 \text{ t/m}^3$$

+ 105

On tem: $P = 6,42 \text{ t/m}^3$

N/3

Dans

$$M_1 = 105 \text{ t}$$

$$P_1 = 19000 \text{ kg/m}^3$$

$$M_2 = 10000 \text{ kg/m}^3$$

$$M_1 = \frac{M_2}{\frac{P_1}{P_2}} \rightarrow M_2 = \frac{M_1 \cdot P_2}{P_1}$$

+ 105

Receveur

Obtenuer pecteur

$$V_1 = V_2$$

$$M_2 = \frac{105 \text{ t} \cdot 19000 \text{ kg/m}^3}{10000 \text{ kg/m}^3} = 126 \text{ t}$$

On tem: $M = 126 \text{ t}$

N4.

Dawa:

?

06

N5

Rechenen

Dawa:

hpu necessary resistance

equivalent $R_1 + R_2 + R_3 = R_{total}$

replacement.

$$\frac{1}{R_{total}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$1/R_2 = \frac{2R \cdot 2R}{2R + 2R} = \frac{4R}{4R} = R$$

Correct

$$2) R + R = 2R$$

u gaiten see netmpheemee

u mofaemee R.

Отмет: Сопротивления цепи
Бюджет равно R .

58

N1

Dano:

$$v_1 = 90 \text{ km/h}$$

$$v_2 = 15 \text{ km/h}$$

$v_{\text{cp}} = ?$

Решение.

$$t_1 = \frac{S_1}{v_1} = \frac{2S}{90}$$

$$t_2 = \frac{S}{v_2} = \frac{S}{30}$$

$$t = t_1 + t_2 = \frac{2S}{90} + \frac{S}{30}$$

$$v_{\text{cp}} = \frac{3v_1 v_2}{v_1 + 2v_2}$$

$$v_{\text{cp}} = \frac{3 \cdot 90 \text{ km/h} \cdot 15 \text{ km/h}}{90 \text{ km/h} + 2 \cdot 15 \text{ km/h}} = 33,75$$

Ответ: $v_{\text{cp}} = 33,75 \text{ km/h}$

N2

Dano:

$$m = 800 \text{ g} = 0,8 \text{ kg}$$

$$S = 150 \text{ cm}^2$$

$\rho = ?$

Решение.

$$S = 6a^2 \rightarrow a = \sqrt{\frac{S}{6}}$$

$$V = a^3 = \left(\frac{\sqrt{S}}{6}\right)^3$$

$$\rho = \frac{m}{V} = \frac{m}{\left(\frac{\sqrt{S}}{6}\right)^3}$$

$$\rho = \frac{800 \text{ g}}{\left(\frac{\sqrt{150}}{6}\right)^3 \text{ cm}^3} = 6,42 \text{ g/cm}^3$$

Ответ: $\rho = 6,42 \text{ g/cm}^3$

N3

Dano

$$m_1 = 105 \text{ kg}$$

$$\rho_1 = 1900 \text{ kg/m}^3$$

$$\rho_2 = 1000 \text{ kg/m}^3$$

$$m_2 = ?$$

Решение

Объемы равны

$$V_1 = V_2$$

$$\frac{m_1}{\rho_1} = \frac{m_2}{\rho_2} \rightarrow m_2 = \frac{m_1 \rho_2}{\rho_1}$$

$$m_2 = \frac{105 \text{ kg} \cdot 1000 \text{ kg/m}^3}{1900 \text{ kg/m}^3} = 126 \text{ kg}$$

Ответ: $m = 126 \text{ kg}$