

N1

Дано

$$t_1 = 20 \text{ c}$$

$$t_2 = 50 \text{ c}$$

$$K_1 = 1,8$$

$$K_2 = 2,4$$

$$g = 10 \text{ м/с}^2$$

$$a_1 = ?$$

$$v_{\text{ср}} = ?$$

Анализ

$$a = \frac{\Delta v}{\Delta t}$$

$$a_1 = \frac{\Delta v}{t_1}$$

$$v_0 = 0$$

$$\Delta v = \frac{g t_1^2}{2} = \frac{10 \cdot 30^2}{2} = \frac{9000 \text{ м/с}}{2} = 4500 \text{ м/с}$$

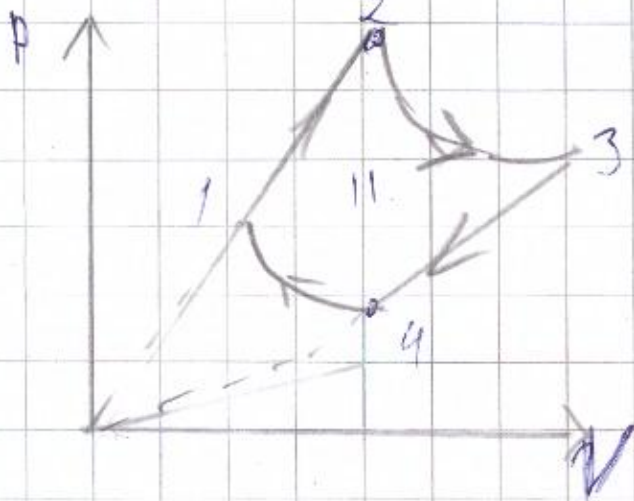
$$a_1 = \frac{\Delta v}{t_1} = \frac{4500 \text{ м/с}}{20} = 225 \text{ м/с}^2$$

$$v_{\text{ср}} = \Delta k \cdot \Delta t = (K_2 - K_1) \cdot \Delta t$$

$$= 0,6 \cdot 30 \text{ c} = 18$$

Ответ: $a_1 = 225 \text{ м/с}^2$, $v_{\text{ср}} = 18$

N2



2-3 изотерм

4-1 изотерм

$$V_2 = V_4 \quad 2=4 \text{ равны}$$

$$4-2 = 2$$

Ответ: 2

N3

Дано

$$I_2 = \frac{I_1}{4}$$

$$v = ?$$

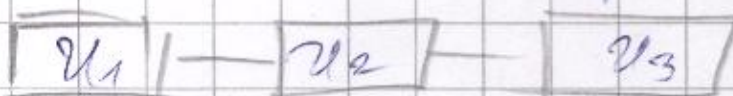
$$I_2 = \frac{I_1}{4}$$

$$I_1 = I_2 \cdot 4$$

$$v = 4 \text{ м/с}$$

Ответ: $v = 4 \text{ м/с}$

Последовательные



N4

$$n = 1,5$$

$$R_1 = R_2$$

$$\frac{1}{F} = ?$$

$$\frac{1}{F} = (n-1) \left(\frac{1}{R_1} + \frac{1}{R_2} \right)$$

$$\frac{1}{F} = (n-1) \left(\frac{1}{R} + \frac{1}{R} \right)$$



$$\frac{1}{F} = (1,5 - 1) \frac{2}{R}$$

$$\frac{1}{F} = 0,5 \frac{2}{R}$$

$$\frac{1}{F} = \frac{1}{R}$$

Ответ: $\frac{1}{F} = \frac{1}{R}$