

Latvijas 33. Atklātās fizikas olimpiādes

ATBILŽU LAPA

(2008. gads)

2. uzdevums

$$a > 0 : \implies t_0 = \frac{v}{a} \left[-1 + \frac{\sqrt{-a_1(a - a_1)(v^2 + 2aS)}}{(a - a_1)v} \right] - \frac{L}{c} \quad (a_1 < 0)$$

$$a = 0 : \implies \frac{S}{v} + \frac{v}{2a_1} - \frac{L}{c}$$

3. uzdevums

$$\frac{\rho_{\text{mat1}}}{\rho_{\text{mat2}}} = \frac{\rho_1}{\rho_2}$$

4. uzdevums

tuvāk ekrānam par 5 cm

5. uzdevums

$$P_{\min} = 18 \text{ W (7. un 8. rezistori)}$$

$$P_{\max} = 40,5 \text{ W (piemēram, 1. un 4. rezistori)}$$

6. uzdevums

$$\alpha_2 = \frac{\rho_2(c_1 m_1 m_3 + c_2 m_2 m_3 - \alpha_1 m_1 Q)}{\rho_1 m_2 Q} \approx 1,65 \cdot 10^{-4} \text{ K}^{-1}$$

7. uzdevums

$$v_0 = \sqrt{2\mu g L \left(1 + \frac{m}{M} \right)}$$

8. uzdevums

$$T = \frac{T_0(p_{\text{atm}} + \rho g H)^2}{4\rho g h [p_{\text{atm}} + \rho g (H - h)]} \approx 326 \text{ K}$$

9. uzdevums

$$v = \frac{qB(r^2 + R^2)}{2mR}$$