

A1  $q = \frac{v^2}{R} \Rightarrow v = \sqrt{qR} \Rightarrow 3$

A2  $F = m\bar{a} \Rightarrow 1$

A3  $\int \mu = F_{\text{тр}} / N \Rightarrow 1$

A4  $\frac{p_1}{p_2} = \frac{m_1 v_1}{m_2 v_2} \Rightarrow \frac{v_1}{v_2} = \frac{p_1}{p_2} \cdot \frac{m_2}{m_1} = 6 \cdot \frac{1}{2} = 3 \Rightarrow 3$

A5  $E = \frac{mv^2}{2} \Rightarrow v = \sqrt{\frac{2E}{m}} = 3v_0 \Rightarrow 3$

A6  $m_1 d_1 = m_2 d_2 \Rightarrow 4$

A7  $\leftarrow \begin{matrix} 30 \text{ g/s} \\ \oplus \oplus \oplus \oplus \\ x \end{matrix} \right. v = \frac{p_1 + p_2 + p_3}{m_1 + m_2 + m_3} = \frac{0 + 3mv + 9mv}{3m} = 2v \Rightarrow 2$

A8 ??? только в худшем!

A9  $P = \alpha T \Rightarrow 2$

A10  $Q = 0 \Rightarrow \Delta U = -A \Rightarrow \Delta U > 0 \Rightarrow 1$

A11  $c = \frac{Q}{m\Delta T} = \frac{5000}{1 \cdot 5} = 1000 \Rightarrow 3$

A12  $\eta = 1 - \frac{T_v}{T_n} = 1 - \frac{290}{630} = 0,54 \Rightarrow A = 4Q_v \Rightarrow$   
 $\Rightarrow Q_v = \frac{A}{0,54} = 29 \text{ (кДж)} \Rightarrow 4$

A13  $4$

A14  $\frac{1}{R_3} = \frac{1}{22} + \frac{1}{22} + \frac{1}{2} = \frac{4}{22} \Rightarrow R_3 = 5,5 \Omega$   
 $\Rightarrow R_{\text{общ}} = R_3 + 2 = 7,5 \Omega \Rightarrow 1$

A15  $1$

A16  $T = 2\pi\sqrt{LC} \Rightarrow 2$

A17  $2$

A18  $2 \quad c = \text{const}$

A19  $1$  (см. решение задания 2009\_155\_A19)

A20  $4$

A21  $3$

A22  $A = 14 + 4 - 1 = 17 \quad Z = 7 + 2 - 1 = 8 \Rightarrow 2$

A23  $E_{\text{кин}} = E_{\text{ф}} - A = 10 \cdot 10^{-19} - 4,5 \cdot 10^{-19} = 5,5 \cdot 10^{-19} \text{ (Дж)} \Rightarrow 4$

A24  $2$

A25  $3 \quad \text{от } [B_0] = \left[ \frac{2\pi}{c} \right]$

A1

A	B	B
2	1	2

$T = 2\pi\sqrt{\frac{m}{k}} \quad \Delta = \frac{1}{T} \quad T_2 = \pi\sqrt{\frac{m}{k}}$

B2  $A \begin{matrix} X \\ Y \end{matrix} \rightarrow \begin{matrix} 0 \\ -1 \end{matrix} \begin{matrix} B \\ A \end{matrix} + \begin{matrix} A \\ 2 \end{matrix} \begin{matrix} Y \\ X \end{matrix} \quad Z = B \quad A = B + A$

A	B
2	1

B3  $Q_{\text{max}} = \omega V_{\text{max}} \quad ; \quad \omega = \sqrt{\frac{k}{m}} = \sqrt{\frac{2000}{2}} = 10 \text{ (с}^{-1}\text{)}$   
 $\Rightarrow Q_{\text{max}} = 10 \cdot 1 = 10 \text{ (мКл)} \Rightarrow 10$

B4  $PV = 2RT$   
 $(P - 150) \cdot 2V = 2RT \Rightarrow P = 2(P - 150)$   
 $\Rightarrow P = 300 \text{ (кПа)} \Rightarrow 300$

B5  $\varepsilon = \eta R = B l v \Rightarrow l = \frac{\eta R}{B v} = \frac{10^{-2} \cdot 2}{0,1 \cdot 2} = 0,1 \text{ (м)} \Rightarrow 0,1$