

1.

$$\frac{2 \cdot 0,01}{0,1^2} = 2 \left(\frac{m}{c}\right).$$

$$s = \frac{at^2}{2} \Rightarrow a = \frac{2s}{t^2} =$$

2.

3.



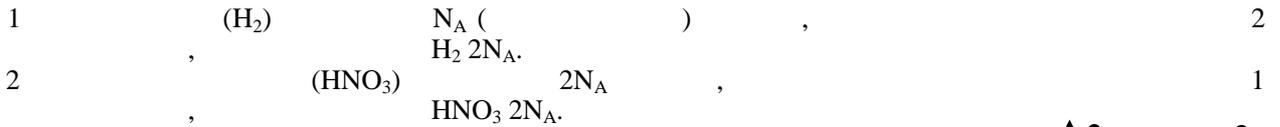
():

$$\begin{cases} m_1 a = T_1 \\ m_2 a = T_2 \end{cases} = \frac{T_1}{T_2} = \frac{m_1}{m_2} \quad 1 \left(\dots m_1 \quad m_2 \right) \quad T_1 \quad T_2.$$

4.

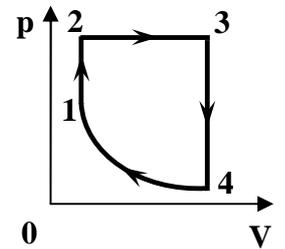
$$A = F_A S \cos 0^\circ = \rho_1 g V S = 1000 \cdot 10 \cdot 0,01 \cdot 2 = 200 \text{ ()} \quad 0^\circ -$$

5.



6.

1-2 - ; 2-3 ;
 3-4 ; 4-1 ;

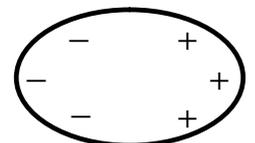


7.

$$U \sim \nu RT = pV.$$

8.

9.



10.

$$\varphi = k \frac{q}{R}$$

3

3

11.

$$U = \frac{\varepsilon R}{R+r} = \frac{\varepsilon \cdot 0}{0+r} = 0.$$

12.

$$: F_A = BIl \sin \alpha$$

13.

(,) , ... ()

14.

15.

$$C = \frac{q_m}{U_m} = \frac{10 \cdot 10^{-9}}{50} = 0,2 \cdot 10^{-9} = 0,2 ().$$

16.

$$\frac{N_1}{N_2} = \frac{U_1}{U_2} \quad U_2 = \frac{N_2 \cdot U_1}{N_1} = \frac{4000 \cdot 150}{1000} = 600 ().$$

17.

(,) , ...

18.

19.

$$E = mc^2.$$

20.

$$N = N_0 \cdot 2^{-\frac{t}{T}}, \quad N - \dots N_0 - N.$$

$$\frac{1}{8}$$

$$1 - \frac{1}{8} = \frac{7}{8}$$

21. 1 ,2 ,3 ,4

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22. 1 ,2 ,3 ,4

(1) (0). $Q = cm \cdot t + \lambda m = ct_1 + \lambda \cdot 5 ()$.

23. 1 ,2 ,3 ,4

24. 1 ,2 ,3 ,4

25. 1,5

$$a = \frac{v^2}{R}$$

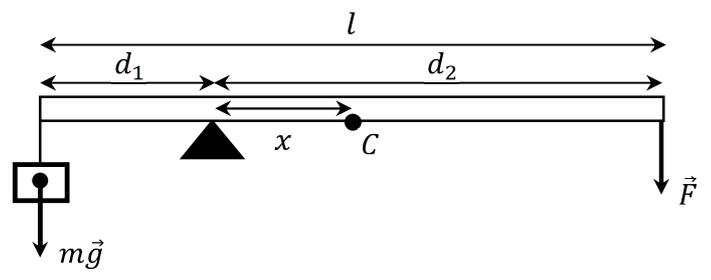
$$\frac{v_1^2 R_2}{R_1 v_2^2} = \frac{30^2 \cdot 50}{300 \cdot 10^2} = 1,5.$$

26. 30 ()

x -

$$mgd_1 - Fd_2 = 0$$

$$\left\{ \begin{aligned} d_1 &= \frac{l}{2} - x \\ d_2 &= \frac{l}{2} + x \end{aligned} \right. = x = \frac{l(mg-F)}{2(mg+F)} = \frac{1 \cdot (8 \cdot 10 - 20)}{2 \cdot (8 \cdot 10 + 20)} = 0,3 () = 30 ()$$



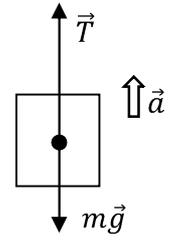
27. 2 (/ 3)

$$\frac{pM}{RT}, \rho = \frac{m}{V} \quad \rho = \frac{pM}{RT} = \frac{166 \cdot 10^3 \cdot 32 \cdot 10^{-3}}{8,3 \cdot 320} = 2 \text{ /м}^3. \text{ Перед}$$

$$pV = \frac{m}{M} RT \quad \frac{m}{V} =$$

28. 15 (/ 2)

$$\left\{ \begin{aligned} T - mg &= ma \\ \sigma_{п.п.} &= \frac{T}{S} \end{aligned} \right. = \sigma_{п.п.} = \frac{m(a+g)}{S} \quad a = \frac{\sigma_{п.п.} S - mg}{m} = \frac{500 \cdot 10^6 \cdot 20 \cdot 10^{-4} - 40 \cdot 10^3 \cdot 10}{40 \cdot 10^3} = 15 (/c^2). \text{ Пере}$$



29. 9 ()

$$\left\{ \begin{aligned} C &= \frac{q}{U} \\ C &= \frac{\epsilon \epsilon_0 S}{d} \end{aligned} \right. = q = \frac{\epsilon \epsilon_0 S U}{d}$$

$$q = \frac{\epsilon_0 S U}{d} (\epsilon_2 - \epsilon_1) = \frac{9 \cdot 10^{-12} \cdot 0,03 \cdot 100}{3 \cdot 10^{-3}} \cdot (2 - 1) = 9 \cdot 10^{-9} () = 9 ()$$

30. 2,04 ()

$$\begin{cases} P = \frac{U^2}{R} \\ U = \frac{\varepsilon R}{R+r} \end{cases} \Rightarrow \varepsilon = \frac{U^2 + rP}{U} \quad (\varepsilon, R)$$

$$\begin{cases} \varepsilon = \frac{U_1^2 + rP_1}{U_1} \\ \varepsilon = \frac{U_2^2 + rP_2}{U_2} \end{cases} \Rightarrow r = \frac{U_1 U_2 (U_1 - U_2)}{U_1 P_2 - U_2 P_1} = \frac{102 \cdot 100 \cdot (102 - 100)}{102 \cdot 100 - 100 \cdot 2} = 2,04 \text{ ()}$$

31. 0,1 ()

$$I_i = \frac{|\varepsilon_i|}{R} = \frac{BS(\cos\alpha_1 - \cos\alpha_2)}{R \cdot t} = \frac{2 \cdot 10^{-3} \cdot 0,02 \cdot (0,5 - 0)}{2 \cdot 0,1} = 10^{-4} \text{ ()} = 0,1 \text{ ()}$$

32. 20 (/²)

$$\begin{cases} |a_m| = A\omega^2 \\ \omega = \frac{2\pi}{T} \\ T = 2\pi\sqrt{\frac{m}{k}} \\ kx = mg \end{cases} \Rightarrow \begin{cases} |a_m| = A \cdot \frac{k}{m} \\ k = \frac{mg}{x} \end{cases} \Rightarrow |a_m| = \frac{Ag}{x} = \frac{0,04 \cdot 10}{0,02} = 20 \text{ (} \frac{1}{c^2} \text{)}$$

33. 1,5 ()

$$l = 3 \text{ ()}$$

$$\begin{cases} f + d = l \\ D = \frac{1}{f} + \frac{1}{d} \end{cases} \Rightarrow \begin{cases} d = \frac{l}{\Gamma+1} \\ f = \frac{l\Gamma}{\Gamma+1} \end{cases} \Rightarrow D = \frac{\Gamma+1}{l} \left(\frac{1}{\Gamma} + 1 \right) = \frac{2+1}{3} = \left(\frac{1}{2} + 1 \right) = 1,5 \text{ ()}$$

34. 0,6 ()

$$\begin{cases} \frac{hc}{\lambda} = A + U \\ A_1 = \frac{hc}{\lambda_m} \end{cases} \Rightarrow U = \frac{hc(\lambda_m - \lambda)}{e\lambda_m\lambda} = \frac{6,6 \cdot 10^{-34} \cdot 3 \cdot 10^8 \cdot (660 \cdot 10^{-9} - 500 \cdot 10^{-9})}{1,6 \cdot 10^{-19} \cdot 660 \cdot 10^{-9} \cdot 500 \cdot 10^{-9}} = 0,6 \text{ ()}$$