# ТОП-100 ВАЖНЕЙШИХ ФОРМУЛ ПО ФИЗИКЕ

1. $L = \upsilon \cdot t$
2. $S = \upsilon_0 t \pm \frac{a \cdot t^2}{2}$
3. $S = \frac{\upsilon^2 - \upsilon_0^2}{2a}$
4. $x = x_0 \pm \upsilon_{0x} t \pm \frac{a_x \cdot t^2}{2}$
5. $\upsilon = \upsilon_0 \pm at$
6. $\upsilon_{\text{пад.}} = \sqrt{2gh}$
7. $h_{\max} = \frac{\upsilon_{0y}^2}{2g}$
8. $S_{\text{дальность}} = \upsilon_{0x} t_{\text{пад.}} = \upsilon_{0x} \sqrt{\frac{2h_0}{g}}$
9. $\upsilon_{\text{гориз. бросок}} = \sqrt{\upsilon_{0x}^2 + (gt)^2}$
10. $T = \frac{t}{N}$
11. $T = \frac{1}{\nu}, \ \nu = \frac{1}{T}$
12. $\omega = \frac{\Delta\varphi}{\Delta t}$
13. $\omega = \frac{2\pi}{T} = 2\pi\nu$
14. $\upsilon = \omega R$
15. $a_n = \frac{\upsilon^2}{R} = \omega^2 R = \upsilon\omega$
16. $\vec{F} = m\vec{a}$
17. $\vec{F}_{1-2} = -\vec{F}_{2-1}$
18. $F_{\text{упр.}} = kx$
19. $F_{\text{трен. макс.}} = \mu N$
20. $F = G\frac{m_1 m_2}{r^2}$
21. $g = \frac{GM}{R^2}$
22. $\upsilon_{\text{перв. косм.}} = \sqrt{gR}$
23. $k_{\text{парал.}} = k_1 + k_2 + \ldots$
24. $\frac{1}{k_{\text{послед.}}} = \frac{1}{k_1} + \frac{1}{k_2} + \ldots$
25. $p = \frac{F}{S}$
26. $p = \rho g h$
27. $F_{\text{Арх.}} = \rho g V$
28. $\vec{p} = m\vec{\upsilon}$
29. $\vec{F} = \frac{\Delta\vec{p}}{\Delta t}$
30. $A = FS \cdot \cos\alpha \quad A = E_2 - E_1$
31. $P = \frac{A}{t}$
32. $P = F\upsilon$
33. $\eta = \frac{A_{\text{полезн.}}}{A_{\text{затр.}}} = \frac{P_{\text{полезн.}}}{P_{\text{затр.}}}$
34. $E_K = \frac{m\upsilon^2}{2}$
35. $E_П = mgh$
36. $E_П = \frac{kx^2}{2}$
37. $\nu = \frac{m}{M} = \frac{N}{N_A}$
38. $m = \rho V$
39. $pV = \nu RT$
40. $\nu_{кв} = \sqrt{\frac{3kT}{m_0}} = \sqrt{\frac{3RT}{M}}$
41. $\langle\varepsilon\rangle = \frac{3}{2}kT$
42. $\frac{PV}{T} = \text{const}$
43. $Q = cm\Delta t$
44. $Q = \lambda m$
45. $Q = Lm$
46. $Q = qm$
47. $U = \frac{3}{2}\nu RT$
48. $A = p\Delta V$
49. $Q = \Delta U + A$
50. $\eta_{\text{Карно}} = \frac{T_{\text{нагр.}} - T_{\text{холод.}}}{T_{\text{нагр.}}}$

51. $\eta = \dfrac{A}{Q_{\text{получ.}}} = \dfrac{Q_{\text{получ.}} - \left|Q_{\text{отдан.}}\right|}{Q_{\text{получ.}}}$

52. $F = k\dfrac{|q_1||q_2|}{\varepsilon r^2}$

53. $\vec{E} = \dfrac{\vec{F}}{q}$

54. $E = \dfrac{k}{\varepsilon}\dfrac{|Q|}{r^2}$

55. $W = k\dfrac{q_1 q_2}{\varepsilon R}$

56. $\varphi = k\dfrac{q}{\varepsilon R}$

57. $E = \dfrac{U}{d}$

58. $C = \dfrac{\varepsilon\varepsilon_0 S}{d}$

59. $q = CU$

60. $W_C = \dfrac{q^2}{2C} = \dfrac{CU^2}{2} = \dfrac{qU}{2}$

61. $I = \dfrac{q}{t}$

62. $R = \rho\dfrac{l}{S}$

63. $I = \dfrac{U}{R}$

64. $I = \dfrac{\varepsilon}{R + r}$

65. $Q = A = I^2 R\Delta t = IU\Delta t = \dfrac{U^2}{R}\Delta t$

66. $P = I^2 R = IU = \dfrac{U^2}{R}$

67. $\sigma = \dfrac{q}{S}$

68. $A = qEd = qU$

69. $E = \dfrac{\sigma}{\varepsilon\varepsilon_0}$

70. $R_{\text{послед.}} = R_1 + R_2 + \ldots$

71. $\dfrac{1}{R_{\text{парал.}}} = \dfrac{1}{R_1} + \dfrac{1}{R_2} + \ldots$

72. $I_{\text{кз}} = \dfrac{\varepsilon}{r}$

73. $F_{\text{Амп.}} = BIl\sin\alpha$

74. $F_{\text{Лор.}} = q\upsilon B\sin\alpha$

75. $\Phi = BS\cos\alpha$

76. $\Phi = LI$

77. $\xi_{\text{инд}} = -\dfrac{\Delta\Phi}{\Delta t}$

78. $W_M = \dfrac{\Phi I}{2} = \dfrac{LI^2}{2} = \dfrac{\Phi^2}{2L}$

79. $B_{\text{прямого тока}} = \dfrac{\mu_0}{2\pi}\dfrac{I}{R}$

80. $B_{\text{в центре витка}} = \dfrac{\mu_0 I}{2R}$

81. $B_{\text{соленоида}} = \mu_0 I\dfrac{N}{L}$

82. $\xi_{\text{си}} = -L\dfrac{\Delta I}{\Delta t}$

83. $T = 2\pi\sqrt{\dfrac{l}{g}}$

84. $T = 2\pi\sqrt{\dfrac{m}{k}}$

85. $T = 2\pi\sqrt{LC}$

86. $\upsilon_{\text{света}} = \dfrac{c}{n}$

87. $\lambda = \upsilon T = \dfrac{\upsilon}{\nu}$

88. $d\sin\varphi = m\lambda$

89. $\dfrac{\sin\alpha}{\sin\beta} = \dfrac{n_2}{n_1}$

90. $\pm\dfrac{1}{d} \pm \dfrac{1}{f} = \pm\dfrac{1}{F} = D$

91. $\Gamma = \dfrac{h_{\text{изображения}}}{h_{\text{предмета}}} = \dfrac{f}{d}$

92. $E = h\nu = \dfrac{hc}{\lambda}$

93. $E = mc^2$

94. $h\nu = A_{\text{вых}} + \left(\dfrac{m\upsilon^2}{2}\right)_{\max}$

95. $p = \dfrac{E}{c} = \dfrac{h}{\lambda}$

96. $A_{\text{вых}} = \dfrac{hc}{\lambda_{\text{кр}}}$

97. $h\nu_{nm} = \left|E_n - E_m\right|$

98. $E_n = \dfrac{E_1}{n^2}$

99. $N(t) = N_0 \cdot 2^{-\frac{t}{T}}$

100. $x_{\text{центра масс}} = \dfrac{x_1 m_1 + x_2 m_2 + x_3 m_3 + \ldots}{m_1 + m_2 + m_3 + \ldots}$