



Nacionalni centar
za vanjsko vrednovanje
obrazovanja

Adesivo per l'identificazione

INCOLLARE ATTENTAMENTE

FISICA

DRŽAVNA MATURA

šk. god. 2025./2026.

FASCICOLO DELLE FORMULE

FIZ.66.IT.R.T1.08



66561

ELENCO DELLE FORMULE E DELLE COSTANTI

Cinematica

$$\bar{v} = \frac{\Delta s}{\Delta t}$$

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

$$s = v_0 t + \frac{1}{2} a t^2$$

$$v = v_0 + a t$$

$$v^2 = v_0^2 + 2 a s$$

$$a_{cp} = \frac{v^2}{r}$$

$$f = \frac{1}{T}$$

Dinamica

$$a = \frac{F}{m}$$

$$F_{tr} = \mu F_p$$

$$F_{elas} = k x$$

$$p = m v$$

$$F \Delta t = \Delta p$$

$$W = \Delta E$$

$$W = F s \cos \alpha$$

$$E_k = \frac{m v^2}{2}$$

$$\Delta E_{gp} = m g \Delta h$$

$$E_{ep} = \frac{1}{2} k x^2$$

$$P = \frac{W}{t}$$

$$\eta = \frac{W_d}{W_u}$$

$$F_G = G \frac{m_1 m_2}{r^2}$$

Idromeccanica

$$p = \frac{F}{S}$$

$$p = \rho g h$$

$$F_u = \rho g V$$

$$S_1 v_1 = S_2 v_2$$

$$p_1 + \frac{\rho v_1^2}{2} = p_2 + \frac{\rho v_2^2}{2}$$

$$\rho = \frac{m}{V}$$

Termodinamica

$$n = \frac{N}{N_A} = \frac{m}{M}$$

$$\overline{E_k} = \frac{3}{2} k_B T$$

$$U = \frac{3}{2} N k_B T$$

$$pV = nRT$$

$$\ell = \ell_0 (1 + \alpha \Delta t)$$

$$Q = mc \Delta t$$

$$Q_i = m \lambda$$

$$Q_i = m r$$

$$Q = W + \Delta U$$

$$W = p \Delta V$$

$$\eta = 1 - \frac{T_2}{T_1}$$

Elettricità e magnetismo

$$F = \frac{k}{\epsilon_r} \frac{q_1 q_2}{r^2}$$

$$E = \frac{F}{q}$$

$$E = \frac{k}{\epsilon_r} \frac{q}{r^2}$$

$$W = qU$$

$$E = \frac{U}{d}$$

$$\varphi = \frac{k}{\epsilon_r} \frac{q}{r}$$

$$C = \frac{q}{U}$$

$$C = \epsilon_0 \epsilon_r \frac{S}{d}$$

$$W = \frac{CU^2}{2}$$

$$I = \frac{\Delta q}{\Delta t}$$

$$I = \frac{U}{R}$$

$$R_u = R_1 + R_2 + R_3 + \dots + R_n$$

$$\frac{1}{R_u} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots + \frac{1}{R_n}$$

$$R = \rho \frac{\ell}{S}$$

$$I = \frac{\mathcal{E}}{R_u + R_v}$$

$$P = UI$$

$$B = \mu_0 \mu_r \frac{I}{2r\pi}$$

$$B = \mu_0 \mu_r \frac{NI}{\ell}$$

$$F = BI \ell \sin \alpha$$

$$F_L = qvB \sin \alpha$$

$$\Phi = BS \cos \alpha$$

$$U_i = -N \frac{\Delta \Phi}{\Delta t}$$

$$U_i = -B \ell v \sin \alpha$$

$$I = \frac{U}{Z}$$

$$R_L = L\omega$$

$$R_C = \frac{1}{C\omega}$$

$$Z = \sqrt{R^2 + (R_L - R_C)^2}$$

$$i = i_0 \sin(\omega t + \varphi_0)$$

$$\frac{N_1}{N_2} = \frac{U_1}{U_2} = \frac{I_2}{I_1}$$

Oscillazioni e onde

$$T = 2\pi\sqrt{\frac{m}{k}}$$

$$T = 2\pi\sqrt{\frac{\ell}{g}}$$

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

$$\omega = \frac{2\pi}{T}$$

$$y = A \sin(\omega t + \varphi_0)$$

$$v = v_0 \cos(\omega t + \varphi_0)$$

$$v_0 = \frac{2\pi A}{T}$$

$$v = \frac{\lambda}{T}$$

$$a = -a_0 \sin(\omega t + \varphi_0)$$

$$a_0 = \frac{4\pi^2 A}{T^2}$$

$$y = A \sin\left(\omega t - \frac{2\pi x}{\lambda}\right)$$

$$L = 10 \log \frac{I}{I_0}$$

$$f_p = f_i \frac{v + v_p}{v - v_i}$$

$$I = \frac{P}{S}$$

Ottica

$$n = \frac{c}{v}$$

$$\frac{\sin \alpha}{\sin \beta} = \frac{n_2}{n_1}$$

$$\frac{1}{a} + \frac{1}{b} = \frac{1}{f}$$

$$\frac{y'}{y} = -\frac{b}{a}$$

$$j = \frac{1}{f}$$

$$\lambda = \frac{sd}{a}$$

$$d \sin \alpha_k = k\lambda$$

$$\operatorname{tg} \alpha_B = n$$

Fisica moderna

$$L = L_0 \sqrt{1 - \frac{v^2}{c^2}}$$

$$T = \frac{T_0}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$E = \frac{mc^2}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$E_f = hf$$

$$E_f = W_i + E_k$$

$$\lambda = \frac{h}{p}$$

$$E_f = E_n - E_m = -13,6 \text{ eV} \left(\frac{1}{n^2} - \frac{1}{m^2} \right); \quad n > m$$

$$E = \Delta mc^2$$

$$N = N_0 2^{-\frac{t}{T}} = N_0 e^{-\lambda t}$$

$$\lambda = \frac{\ln 2}{T}$$

$$A = \lambda N$$

Costanti

costante gravitazionale	$G = 6,67 \cdot 10^{-11} \text{ N kg}^{-2} \text{ m}^2$
accelerazione della caduta libera sulla superficie terrestre	$g = 9,81 \text{ m s}^{-2}$ (prendere 10 m s^{-2})
massa della Terra	$M = 6 \cdot 10^{24} \text{ kg}$
raggio terrestre	$R = 6370 \text{ km}$
pressione atmosferica standard	$p_a = 101325 \text{ Pa}$
massa atomica unificata	$u = 1,66 \cdot 10^{-27} \text{ kg}$
costante di Avogadro	$N_A = 6,022 \cdot 10^{23} \text{ mol}^{-1}$
costante universale di un gas	$R = 8,314 \text{ J K}^{-1} \text{ mol}^{-1}$
velocità della luce nel vuoto	$c = 3 \cdot 10^8 \text{ m s}^{-1}$
carica elementare	$e = 1,6 \cdot 10^{-19} \text{ C}$
massa dell'elettrone	$m_e = 9,11 \cdot 10^{-31} \text{ kg}$
massa del protone	$m_p = 1,67 \cdot 10^{-27} \text{ kg}$
costante di Coulombo	$k = 9 \cdot 10^9 \text{ N m}^2 \text{ C}^{-2}$
costante dielettrica nel vuoto	$\epsilon_0 = 8,85 \cdot 10^{-12} \text{ F m}^{-1}$
permeabilità nel vuoto	$\mu_0 = 4\pi \cdot 10^{-7} \text{ T m A}^{-1}$
soglia di udibilità	$I_0 = 10^{-12} \text{ W m}^{-2}$
costante di Boltzmann	$k_B = 1,38 \cdot 10^{-23} \text{ J K}^{-1}$
costante di Planck	$h = 6,626 \cdot 10^{-34} \text{ J s}$

Sistema periodico degli elementi – IUPAC

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H 1,01		2 He 4,00															
3 Li 6,94	4 Be 9,01		5 B 10,8														
11 Na 23,0	12 Mg 24,3		6 C 12,0														
			7 N 14,0														
			8 O 16,0														
			9 F 19,0														
			10 Ne 20,2														
			11 Na 23,0														
			12 Mg 24,3														
			13 Al 27,0														
			14 Si 28,1														
			15 P 31,0														
			16 S 32,1														
			17 Cl 35,5														
			18 Ar 39,9														
			19 K 39,1														
			20 Ca 40,1														
			21 Sc 45,0														
			22 Ti 47,9														
			23 V 50,9														
			24 Cr 52,0														
			25 Mn 54,9														
			26 Fe 55,8														
			27 Co 58,9														
			28 Ni 58,7														
			29 Cu 63,5														
			30 Zn 65,4														
			31 Ga 69,7														
			32 Ge 72,6														
			33 As 74,9														
			34 Se 79,0														
			35 Br 79,9														
			36 Kr 83,8														
			37 Rb 85,5														
			38 Sr 87,6														
			39 Y 88,9														
			40 Zr 91,2														
			41 Nb 92,9														
			42 Mo 95,9														
			43 Tc [98]														
			44 Ru 101														
			45 Rh 103														
			46 Pd 106														
			47 Ag 108														
			48 Cd 112														
			49 In 115														
			50 Sn 119														
			51 Sb 122														
			52 Te 128														
			53 I 127														
			54 Xe 131														
			55 Cs 133														
			56 Ba 137														
			57-71 lantanoidi														
			58 Hf 178														
			59-103 aktinoidi														
			60 Ta 181														
			61 W 184														
			62 Re 186														
			63 Os 190														
			64 Ir 192														
			65 Pt 195														
			66 Au 197														
			67 Hg 201														
			68 Tl 204														
			69 Pb 207														
			70 Bi 209														
			71 Po [209]														
			72 At [210]														
			73 Rn [222]														
			74 Fr [223]														
			75 Ra [226]														
			76 Ac [227]														
			77 Th 232														
			78 Pa 231														
			79 U 238														
			80 Np [237]														
			81 Pu [244]														
			82 Am [243]														
			83 Cm [247]														
			84 Bk [247]														
			85 Cf [251]														
			86 Es [252]														
			87 Fm [257]														
			88 Md [258]														
			89 No [259]														
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Pagina vuota

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