

FIZIKA 2. RAZRED

$p = \frac{F}{A}$ $p_h = \rho_{tek}gh$	$F_{uz} = \rho_{tek}V'g$ $\rho = \frac{m}{V}$	$F_g = mg$ $F_R = ma$
ČESTIČNA GRAĐA TVARI, TOPLINA I TERMODINAMIKA		
$l = l_0(1 + \alpha\Delta T)$	$A = A_0(1 + 2\alpha\Delta T)$	$V = V_0(1 + 3\alpha\Delta T)$
$Q = mc\Delta T$	$Q_t = m\lambda$	$Q_i = mr$
$pV = nRT$ $pV = Nk_B T$ $p = \frac{\rho RT}{M}$	$p = \frac{1}{3} \frac{N}{V} m_0 \overline{v^2}$ $p = \frac{2}{3} \frac{N}{V} \overline{E_{k0}}$	$\overline{E_{k0}} = \frac{m_0 \overline{v^2}}{2}$ $\overline{E_{k0}} = \frac{3}{2} k_B T$ $v_{SK} = \sqrt{\overline{v^2}}$
$n = \frac{m}{M} = \frac{N}{N_A}$	$U = N \overline{E_{k0}} = \frac{3}{2} N k_B T$	$U = \frac{3}{2} nRT = \frac{3}{2} pV$
IZOBARNI PROCES $\frac{V_1}{T_1} = \frac{V_2}{T_2}$ $W = p \cdot \Delta V$ $Q = \Delta U + W$	IZOHORNI PROCES $\frac{p_1}{T_1} = \frac{p_2}{T_2}$ $W = 0$ $Q = \Delta U$	IZOTERMNI PROCES $p_1 V_1 = p_2 V_2$ $W = nRT \ln \frac{V_2}{V_1}$ $\Delta U = 0$ $Q = W$
$\eta = 1 - \frac{T_2}{T_1}$	$\eta = 1 - \frac{ Q_2 }{Q_1} = \frac{W}{Q_1}$	$\eta = \frac{W}{Q_{u \text{ sustav}}}$
$R = 8,314 J K^{-1} mol^{-1}$	$k_B = 1,38 \cdot 10^{-23} J K^{-1}$	$N_A = 6,022 \cdot 10^{23} mol^{-1}$
ELEKTROSTATIKA		
$Q = Ne$ $e = 1,6 \cdot 10^{-19} C$ $m_e = 9,11 \cdot 10^{-31} kg$ $k = 9 \cdot 10^9 \frac{Nm^2}{C^2}$ $\epsilon_0 = 8,85 \cdot 10^{-12} \frac{C^2}{Nm^2}$	$F = \frac{1}{4\pi\epsilon_0\epsilon_r} \frac{Q_1 Q_2}{r^2}$ $F = \frac{k}{\epsilon_r} \frac{Q_1 Q_2}{r^2}$ VAKUUM $\epsilon_r = 1$	$E = \frac{k}{\epsilon_r} \frac{Q}{r^2}$ $F = E \cdot q$ $E = \frac{U}{d}$

$\varphi = \frac{k}{\varepsilon_r} \frac{Q}{r}$ $U = \Delta\varphi$	$E_{ep} = \frac{k}{\varepsilon_r} \frac{Q_1 Q_2}{r}$ $\varphi = \frac{E_{ep}}{q}$	$\Delta E_{ep} = qU$ $W = \Delta E$
KONDENZATORI		
$C = \frac{Q}{U}$	PLOČASTI KONDENZATOR $C = \varepsilon_0 \varepsilon_r \frac{S}{d}$	$E = \frac{1}{2} QU$
SERIJSKI SPOJ $\frac{1}{C} = \frac{1}{C_1} + \frac{1}{C_2}$	PARALELNI SPOJ $C = C_1 + C_2$	$E = \frac{1}{2} CU^2$ $E = \frac{Q^2}{2C}$
ELEKTRODINAMIKA		
$I = \frac{Q}{t}$ $I = S\bar{v}en$ $n = \frac{N}{V}$	$R = \rho \frac{l}{S}$ $R = R_0(1 + \alpha\Delta T)$	$I = \frac{U}{R}$ $P = U \cdot I$ $W = P \cdot t$
STRUJNI KRUGOVI		
SERIJSKI SPOJ $R = R_1 + R_2$	PARALELNI SPOJ $\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$	$U = \varepsilon - IR_u$ $I = \frac{\varepsilon}{R + R_u}$
DINAMIKA FLUIDA*		
$q = \frac{V}{t} = A \cdot v$ TORRICELLIJEV ZAKON $v = \sqrt{2gH}$	$A_1 v_1 = A_2 v_2$ $p_1 + \frac{1}{2} \rho v_1^2 + \rho gh_1 = p_2 + \frac{1}{2} \rho v_2^2 + \rho gh_2$	
ADIJABATSKI PROCES		
$p_1 V_1^\kappa = p_2 V_2^\kappa$	$\frac{T_2}{T_1} = \left(\frac{V_1}{V_2}\right)^{\kappa-1}$	$\frac{T_2}{T_1} = \left(\frac{p_2}{p_1}\right)^{\frac{\kappa-1}{\kappa}}$
$\kappa = \frac{C_{p,n}}{C_{v,n}} = \frac{c_p}{c_v}$ $C_{p,n} - C_{v,n} = R$	$W = \frac{nR(T_1 - T_2)}{\kappa - 1}$	JEDNOATOMNI PLIN $C_{p,n} = \frac{5}{2} R \quad C_{v,n} = \frac{3}{2} R$ DVOATOMNI PLIN $C_{p,n} = \frac{7}{2} R \quad C_{v,n} = \frac{5}{2} R$