Formelsammlung Physik 10

Arbeit/Energie:

$W = F\,s$; $F \parallel s$

$W_R = \mu F_N s$;

$E_{kin} = \frac{1}{2} mv^2$;

$E_{sp} = \frac{1}{2} Ds^2$;

$E_H = mgh$;

$E_{el} = UIt$;

$E_{Heiz} = mH$;

$E_{Schmelz} = ms$;

$E_{Verdampf} = mr$;

$\Delta E_i = mc\Delta\vartheta$;

$E = mc^2$

Leistung:

$P = W/t$;

$P_{el} = UI$;

Impuls:

$p = mv$

$F = \Delta p/\Delta t$

Geschwindigkeit:

$v = \Delta s/\Delta t$;

Beschleunigung:

$a = \Delta v/\Delta t$

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

$v^2 - v_0^2 = 2as$

Wirkungsgrad:

$\eta = E_{nutz}/E_{ges} = P_{nutz}/P_{ges}$;

Kraft:

$F = ma$;

$F = Ds$;

$F_G = mg$;

Drehmoment:

$M = Fa$; $F \perp a$;

Widerstand:

$R = U/I$;

$R = \rho\, l / A$;

Strom/Ladung:

$I = \Delta Q/\Delta t$;

$U_{12} = W_{12}/Q$

$Q = CU$

Transformator:

$U_1/U_2 = N_1/N_2 = I_2/I_1$

U-Wert:

$P = AU\Delta\vartheta$;

Kepler:

$T_1^2 / T_2^2 = a_1^3 / a_2^3$

$R_{Erde} = 1{,}496 \cdot 10^{11}$ m

$r_{Erde} = 6{,}368 \cdot 10^6$ m

$R_{Mond} = 3{,}844 \cdot 10^8$ m

$T_{Mond} = 27{,}32$ Tage

$c = 3{,}00 \cdot 10^8$ m/s