

VAR GOD OCH LÄMNA IN DETTA BLAD TILLSAMMANS MED DIN TENTAMEN

$$c = 299\,792\,458 \text{ m/s} \approx 3 \cdot 10^8 \text{ m/s}$$

$$h = 6.626\,06876 \cdot 10^{-34} \text{ Js}$$

$$\hbar = 1.054\,573 \cdot 10^{-34} \text{ Js} = 6.582122 \cdot 10^{-16} \text{ eVs}$$

$$e = 1.602\,177 \cdot 10^{-19} \text{ As} \quad 1 \text{ eV} = 1.602\,177 \cdot 10^{-19} \text{ J}$$

$$k = 1.3806503 \cdot 10^{-23} \text{ J/K}$$

$$m_e = 9.109\,383 \cdot 10^{-31} \text{ kg} \quad m_e c^2 = 0.511 \text{ MeV}$$

$$u = 1.660\,538 \cdot 10^{-27} \text{ kg}$$

$$F_x = -\frac{dV(x)}{dx}$$

$$y(x) = y_0 \sin(kx) \quad y(t) = y_0 \sin(\omega t) \quad k = \frac{2\rho}{l} \quad \omega = 2\rho f = \frac{2\rho}{T} \quad c = l/f$$

$$E = hf \quad p = \frac{h}{\lambda} = \hbar k \quad E_{kin} = \frac{p^2}{2m}$$

$$\Delta x \Delta p_x \geq \frac{\hbar}{2} \quad \Delta E \Delta t \geq \frac{\hbar}{2}$$

$$-\frac{\hbar^2}{2m} \varphi''(x) + V(x)\varphi(x) = E\varphi(x)$$

$$s = \frac{\hbar k}{m} |A|^2$$

$$T \approx e^{-2\kappa a}$$

$$f(E) = \frac{1}{1 + e^{\frac{E-E_F}{kT}}}$$

$$n(E) = \frac{8\sqrt{2}\pi m^{3/2}}{h^3} \sqrt{E} \quad E_F = \frac{h^2}{8m} \left(\frac{3n}{\pi}\right)^{2/3}$$

$$\int \sin^2(cx) = \frac{1}{2}x - \frac{1}{4c} \sin(2cx)$$

$$\int \cos^2(cx) = \frac{1}{2}x + \frac{1}{4c} \sin(2cx)$$