A list of formulae, perhaps useful and certainly in no particular order

$$k = 1.38 \times 10^{-23}\ \text{J/K} = 8.6 \times 10^{-5}\ \text{eV/K} \qquad N_A = 6.02 \times 10^{23}$$
$$h = 6.626 \times 10^{-34}\ \text{Js} \qquad c = 3 \times 10^{8}\ \text{m/s}$$
$$e = 1.6 \times 10^{19}\ \text{C} \qquad R = 8.31\ \text{J/mol/K}$$
$$m_p = 1.6 \times 10^{-27}\ \text{kg} \qquad m_e = 9.1 \times 10^{-31}\ \text{kg}$$

Physics Formulae:

$$PV = NkT = nRT \qquad \ln N! \approx N \ln N - N$$
$$C_V = \left(\frac{\partial U}{\partial T}\right)_V \qquad N! \approx N^N e^{-N}\sqrt{2\pi N}$$
$$T^{-1} = \left(\frac{\partial S}{\partial U}\right)_{N,V} \qquad S = Nk\left[\ln\left(\frac{V}{N v_Q}\right) + \frac{5}{2}\right]$$
$$dU = TdS - PdV + \mu dN \qquad v_Q = \left(\frac{h^2}{2\pi m k T}\right)^{3/2}$$
$$dF = -SdT - PdV + \mu dN \qquad F = U - TS$$
$$\bar{E} = -\frac{1}{Z}\frac{\partial Z}{\partial \beta} \qquad \beta = \frac{1}{kT}$$
$$\lambda_{deBroglie} = h/p \qquad E_{K.E.} = mv^2/2 = p^2/2m$$
$$\bar{n}_{Planck} = \frac{1}{e^{hf/kT} - 1} \qquad u(\epsilon) = \frac{8\pi}{(hc)^3}\frac{\epsilon^3}{e^{\epsilon/kT} - 1}$$

Stefan's law: power per unit area $= \sigma T^4$ where $\sigma = \frac{2\pi^5 k^4}{15 h^3 c^2} = 5.67 \times 10^{-8}\ \text{W/m}^2\text{K}^4$
Wien's law: peak photon energy of spectrum (in eV); $\epsilon = 2.82kT$
$Z_{total} = (Z_1)^N$ for distinguishable particles
$Z_{total} = \frac{(Z_1)^N}{N!}$ for indistinguishable particles
Average value of parameter X: $\bar{X} = \sum_s X(s)P(s)$

Math formulae:

$$\sinh x = \frac{e^x - e^{-x}}{2} \qquad \cosh x = \frac{e^x + e^{-x}}{2} \qquad \tanh x = \frac{e^x - e^{-x}}{e^x + e^{-x}}$$
$$\int_{-\infty}^{\infty} e^{-x^2}dx = \sqrt{\pi} \qquad \int_{-\infty}^{\infty} x^2 e^{-x^2}dx = \sqrt{\pi}/2 \qquad \int_0^{\infty} \frac{x^3}{e^x - 1}dx = \frac{\pi^4}{15}$$
$$\int_0^{\infty} \frac{x}{e^x - 1}dx = \frac{\pi^2}{6} \qquad \int_0^{\infty} \frac{x}{e^x + 1}dx = \frac{\pi^2}{12} \qquad \binom{N}{n} = \frac{N!}{n!(N-n)!}$$

For $x \ll 1$, $e^x \approx 1+x$, $\ln(1+x) \approx x$, $\sin x \approx x$, $\cos x \approx 1 - x^2/2$, $\sinh x \approx x$, $\cosh x \approx 1 + x^2/2$, $\tanh x \approx x$. For $x < 1$, $\sum_{n=0}^{\infty} x^n = \frac{1}{1-x}$.