

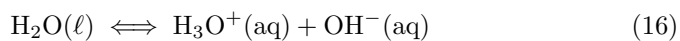
$$1_A = \begin{cases} 1 & \text{if } x \in A, \\ 0 & \text{if } x \notin A. \end{cases} \quad (12)$$

$$n \uparrow \cdots \uparrow n = n \rightarrow n \rightarrow \cdots \rightarrow n \text{ } n \text{ times} \quad (13)$$

In the following, note the spacing between the = and the 1^1 , 2^2 , and 3^3 .

$$\begin{aligned} 1 \uparrow 1 &= 1^1 = 1 \\ 2 \uparrow \uparrow 2 &= 2^2 = 4 \\ 3 \uparrow \uparrow \uparrow 3 &= 3^{3^3} = 3 \uparrow \uparrow 3 \uparrow \uparrow 3 = 3^{3^{3^{\cdots}}} \text{ } 3^{3^3} \text{ threes} \end{aligned} \quad (14)$$

$$\frac{d}{dx}f(x) = \lim_{\Delta x \rightarrow 0} \frac{f(x + \Delta x) - f(x)}{\Delta x} \quad (15)$$



$$\Gamma(n+1) \stackrel{\text{def}}{=} \int_0^\infty e^{-t} t^n dt \quad (17)$$

$$\gcd(n, m \bmod n); \quad x \equiv y \pmod{b}; \quad x \equiv y \bmod c; \quad x \equiv y \pmod{d} \quad (18)$$

In the following, note the bold symbols.

$$\begin{aligned} \boldsymbol{\nabla} \cdot \boldsymbol{E} &= \frac{\rho}{\varepsilon_0} \\ \boldsymbol{\nabla} \cdot \boldsymbol{B} &= 0 \\ \boldsymbol{\nabla} \times \boldsymbol{E} &= -\frac{\partial \boldsymbol{B}}{\partial t} \\ \boldsymbol{\nabla} \times \boldsymbol{B} &= \mu_0 \boldsymbol{J} + \mu_0 \varepsilon_0 \frac{\partial \boldsymbol{E}}{\partial t} \end{aligned} \quad (19)$$