# Notation and Math

# Indicator Function, Indicator Random Variable

**"a nice way of translating Boolean operations into arithmetic ones"**

- "I do not think that you can go more intuitive about it then saying once again what it does: it returns 1 for something that interests you, and 0 for all the other cases." https://stats.stackexchange.com/questions/239055/what-is-the-intuition-behind-an-indicator-function

- Indicator function returns value of 1 when something is true:

$$\mathbf{1}\left[A\right] = \begin{cases} 1 & A \text{ is true} \\ 0 & \text{otherwise} \end{cases}$$

$$\mathbf{1}\left[y(\mathbf{w}^{[t]T}\mathbf{x}) < 1\right] = \begin{cases} 1 & y(\mathbf{w}^{[t]T}\mathbf{x}) < 1 \\ 0 & \text{otherwise} \end{cases}$$