1 Relative Frequency

- $f_k(n) = \frac{N_k(n)}{n} \leftarrow$ **Relative Frequency**
  - k is the outcome
  - $N_k(n)$ is the number of times outcome k
- $\lim_{n\to\infty} f_k(n) = p_k \leftarrow$ **Statistical Regularity**
  - p_k is the probability of event k occurring

1.1 Properties of Relative Frequencies

1. $f_k(n) = \frac{N_k(n)}{n}$
2. $0 \leq N_k(n) \leq n$
3. $0 \leq f_k(n) \leq 1 = \frac{0}{n} \leq \frac{N_k(n)}{n} \leq \frac{n}{n}$
4. $\sum_{k=1}^{k} f_k(n) = \sum_{k=1}^{k} \frac{N_k(n)}{n} = \frac{\sum_{k=1}^{k} N_k(n)}{n} = \frac{n}{n} = 1$
5. $\sum_{k=1}^{k} f_k(n) = 1$
6. If events A and B are disjoint and event C is "A or B", then $F_C = F_A(n) + F_B(n)$