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
- $\lim_{n\to\infty} f_k(n) = p_k \leftarrow \textbf{Statistical Regularity}$
 - $-p_k$ is the probability of event k occurring

1.1 Properties of Relative Frequencies

1.
$$f_k(n) = \frac{N_k(n)}{n}$$

$$2. \ 0 \le N_k(n) \le n$$

3.
$$0 \le f_k(n) \le 1 = \frac{0}{n} \le \frac{N_k(n)}{n} \le \frac{n}{n}$$

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 $F_C = F_A(n) + F_B(n)$