

STA 291, Section 001-006, Spring 2010, Prof. Zhou

Formulas for Exam 1

- Simple Random Sampling: each combination of individuals has an equal chance of been selected.
- For any event A , $0 \leq P(A) \leq 1$.
- $P(S) = 1$.
- $P(A) = 1 - P(A^c)$.
- If A and B are mutually exclusive/disjoint/no overlap, then $P(A \text{ or } B) = P(A) + P(B)$.
- $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$.
- If A and B are independent, then $P(A \text{ and } B) = P(A)P(B)$.
- $P(A \text{ and } B) = P(A)P(B|A)$.
- Sample mean \bar{x}

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n} = \frac{x_1 + x_2 + \cdots + x_n}{n}$$

- If n observations are ordered in ascending order, median is the $\frac{n+1}{2}$ th observation.
- Population mean μ