Test 2 - Formula Sheet 201-SN1-05

$$\frac{n!}{n_1! \times n_2! \times \cdots \times n_r!} \qquad P_r^n = \frac{n!}{(n-r)!} \qquad C_r^n = \frac{n!}{r!(n-r)!}$$

$$P(A) = \frac{n(A)}{n(S)} \quad ; \quad P(A') = 1 - P(A)$$

$$P(A) = P(A \cap B) + P(A \cap B')$$

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$P(A \cap B) = P(A|B) \cdot P(B) \qquad P(A \mid B) = \frac{P(A \cap B)}{P(B)}$$

$$P(B) = P(B \mid E_1) \cdot P(E_1) + P(B \mid E_2) \cdot P(E_2) + \cdots + P(B \mid E_k) \cdot P(E_k)$$

$$P(E_i \mid B) = \frac{P(B \mid E_i) \cdot P(E_i)}{P(B \mid E_1) \cdot P(E_1) + P(B \mid E_2) \cdot P(E_2) + \cdots + P(B \mid E_k) \cdot P(E_k)}$$

$$\mu = E(X) = \sum_{i=1}^{n} x_i \cdot P(X = x_i) \quad ; \quad \sigma^2 = V(X) = E(X^2) - [E(X)]^2$$

$$p(x) = C_k^n \ p^k (1-p)^{n-k} \qquad \mu = np \qquad \sigma^2 = np(1-p)$$