STAT 2220 Formula Sheet – First Midterm

$$s^2 = \frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}$$

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

$$P(A_i \mid B) = \frac{P(A_i)P(B \mid A_i)}{\sum_{j=1}^{n} P(A_j)P(B \mid A_j)}$$

$$F(x) = \sum_{y:\, y \le x} P(X = y)$$

$$F(x) = P(X \le x) = \int_{-\infty}^{x} f(y)dy$$

$$f(x) = \frac{dF(x)}{dx}$$

$$\mu = E(X) = \sum_{i} p_i x_i$$

$$\mu = E(X) = \int_{-\infty}^{\infty} x\, f(x)dx$$

$$\sigma^2 = Var(X) = E(X - E(X))^2 = E(X^2) - [E(X)]^2$$