

$$\sigma^2 = \text{Var}(Y) = \left( \sum_y y^2 p(y) \right) - \mu^2$$

$$P(Y = y) = \binom{n}{y} p^y (1-p)^{n-y}; \quad \text{Var}(Y) = np(1-p)$$

$$s^2 = \frac{1}{n-1} \left( \left( \sum_y y_i^2 \right) - n\bar{y}^2 \right)$$

$$t = \frac{\bar{Y} - \mu}{s/\sqrt{n}}$$

$$b_1 = \frac{SS_{xy}}{SS_{xx}}; \quad b_0 = \bar{y} - b_1 \bar{x};$$

$$SS_{xy} = \left( \sum_y x_i y_i \right) - n\bar{x}\bar{y}$$

$$MS_{res} = \frac{SS_{res}}{n-2}$$