Оценка σ^2:

$$Y_k \in N(\beta_0 + \beta_1 X_k; \sigma^2)$$

$$\frac{Y_k - \beta_0 - \beta_1 X_k}{\sigma} \in N(0,1)$$

$$\sum_{k=1}^{n} \frac{(Y_k - \beta_0 - \beta_1 X_k)^2}{\sigma^2} \in \mathcal{X}^2(n)$$

$$\sum_{k=1}^{n} \frac{(Y_k - b_0 - b_1 X_k)^2}{\sigma^2} \in \mathcal{X}^2(n-2)$$

$$E \sum_{k=1}^{n} \frac{(Y_k - b_0 - b_1 X_k)^2}{\sigma^2} = n-2$$

$$\hat{\sigma}^2 = \frac{\sum_{k=1}^{n}(Y_k - b_0 - b_1 X_k)^2}{n-2}$$

$$\sigma^2 = E \hat{\sigma}^2$$

$$H_0: \beta_1 = \tilde{\beta}$$

$$H_1: \beta_1 = \tilde{\tilde{\beta}}$$

$$Y = \beta_0 + \beta_1 X + \varepsilon$$

$$\frac{b_1 - \tilde{\beta}}{\sqrt{\frac{\sigma^2}{A}}} \in N(0,1) \quad \text{при } H_0$$

За изпита:

- Дистанционно
- ~12 задачи за 2-3 часа
- или с камери, или пи трудни задачи
- ~50% за 3^{00}
- ще има док, ама не дълги и сложни
- Mladensarov@math.bas.bg