

## DISCUSSION 3

Review of tests:

- 1, Permutation test (randomization test)
- 2, t-test
- 3, F-test
- 4,  $\chi^2$ -test
- 5, Other tests – binomial test

Exercises:

1. Question 1 ( textbook p.124 )

1. A civil engineer tested two different types ( $A$  and  $B$ ) of a special reinforced concrete beam. He made nine test beams (five  $A$ 's and 4  $B$ 's) and measured the strength of each. From the following strength data (in coded units) he wants to decide whether there is any real difference between the two types. What assumptions does he need to draw conclusions? What might he conclude? Give reasons for your answers.

Type $A$	67	80	106	83	89
Type $B$	45	71	87	53	

2. Question 11( textbook p.126)

11. Assuming a standard deviation  $\sigma = 0.4$ , calculate a 90% confidence interval for the mean reaction time using the following data (in seconds):

1.4   1.2   1.2   1.3   1.5   1.0   2.1   1.4   1.1

Carefully state and criticize any assumptions you make. Repeat this problem assuming  $\sigma$  is unknown.

3. Talking about Project 1