- Suppose you split a test into two parallel halves and observe a correlation of 0.64 between the two halves. What is the estimated reliability of your test?

- A test is split into two (not necessarily parallel) halves. What is the estimated reliability of a test if the variance of scores on the first half of the test is 50, the variance of the scores on the second half is 60, and the variance of the total test scores is 140?

- A test is split into two (not necessarily parallel) halves. The scores on the first half have a variance of 30, and the scores on the second half have a variance of 18. The correlation between the two halves is 0.82. Caculate the estimated reliability of the test.

A test consists of three items:

subject	Q1	Q2	Q3
A	1	2	2
B	3	4	5
C	3	3	4
D	5	1	4
E	3	5	5

Calculate Cronbach's α and interpret its value in terms of at least two equivalent meanings of reliability.

Use the generalized Spearman-Brown formula to answer the following:

- You have 30 item test with an estimated reliability of 0.7. Estimate the reliability of a 90 item version of this test.

- You have a 50 item test with reliability 0.9. Suppose you would like to shorten it to 10 items. What is the estimated reliability of this 10 item test?

- Suppose I have a 10 item test with reliability 0.8. How long would the test need to be in order to have reliability = 0.9?