

### ONE-SAMPLE T-TEST

Production line for filling up 1 litre bottles is set up such that the mean value of volume should be 500 ml. The quality control of 50 full bottles has revealed that the average volume of the liquid in a bottle was 497 ml with the standard deviation 5 ml. Is the production line set up correct? Test for the 0,05 significance level, expect normal population distribution.

ctly?

TWO-SAMPLE T-TEST ...equal variances

In a sport center there are two running paths Y and Z, seemingly with the same length. An athlete has r 6-times path Y and 5 times path Z; measured times in seconds are given in a table.

Test at the 0,05 significance level that the running time of the path Y is the same as the one of the path Z. Expect that the variance for both cases are the same.

| Y  | Z  |
|----|----|
| 61 | 52 |
| 54 | 57 |
| 55 | 49 |
| 60 | 49 |
| 54 | 51 |
| 58 |    |

'un

Z.

TWO-SAMPLE T-TEST ... unequal variances

In a sport center there are two running paths Y and Z, seemingly with the same length. An athlete has run 6-times path Y and 5 times path Z; measured times in seconds are given in a table.

Test at the 0,05 significance level that the running time of the path Y is the same as the one of the path Z. Expect that the variance for both cases are different.

| Y  | Z  |
|----|----|
| 61 | 52 |
| 54 | 57 |
| 55 | 49 |
| 60 | 49 |
| 54 | 51 |
| 58 |    |

'un

Z.

Paired t-test

In table there are data of average points of sharpness of 10 players by their left and right hand, named Y and Z. Test that at the 0,05 significance level the values for the left and the right hands are the same.

| Y   | Z   |
|-----|-----|
| 2.8 | 2.7 |
| 3.2 | 3.4 |
| 3.7 | 3.5 |
| 3.5 | 3.9 |
| 6.2 | 6.1 |
| 5.1 | 4.9 |
| 3.8 | 4.1 |
| 2.8 | 2.5 |
| 2.6 | 2.8 |
| 5.2 | 5.1 |

Y and Z



### TWO-SAMPLE F-TEST

In a sport center there are two running paths Y and Z, seemingly with the same length. An athlete has run 6-times path Y and 5 times path Z; measured times in seconds are given in a table.

Test at the 0,05 significance level that the variance of the running time of the path Y is the same as the variance of the path Z.

| Y  | Z  |
|----|----|
| 61 | 52 |
| 54 | 57 |
| 55 | 49 |
| 60 | 49 |
| 54 | 51 |
| 58 |    |

'un

one of the path Z.