ANOVA ZADATAK 1

1)

Analiza varijanse

2)

ANOVA upoređuje srednje vrednosti

3)

Ho: nema razlike u količini prodate robe bez obzira na način izlaganja

Ha: postoji razlika barem između dva načina izlaganja

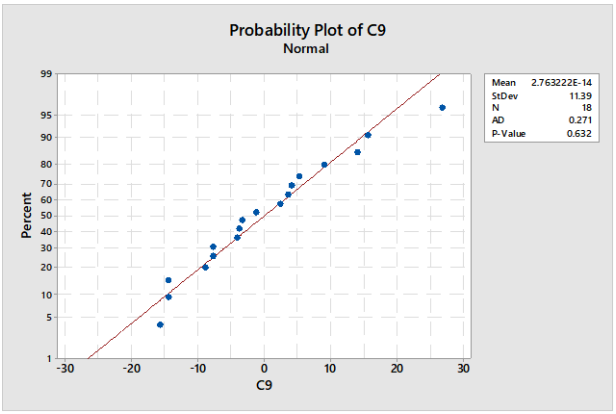
α=0.05

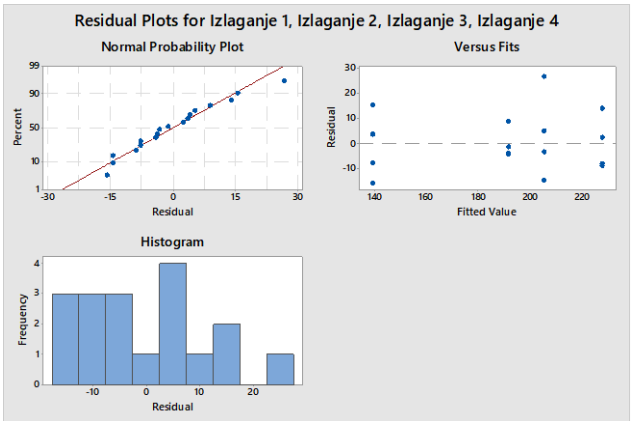
One-way ANOVA: Izlaganje 1, Izlaganje 2, Izlaganje 3, Izlaganje 4

```
Method

Null hypothesis         All means are equal
Alternative hypothesis  At least one mean is different
Significance level      α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor  Levels  Values
Factor       4  Izlaganje 1, Izlaganje 2, Izlaganje 3, Izlaganje 4

Analysis of Variance

Source  DF  Seq SS  Contribution  Adj SS  Adj MS  F-Value  P-Value
Factor   3   19644        89.91%   19644  6548.1    41.60    0.000
Error   14    2204        10.09%    2204   157.4
Total   17   21848       100.00%

Model Summary
      S    R-sq  R-sq(adj)    PRESS  R-sq(pred)
12.5457  89.91%     87.75%  3540.44      83.80%

Means

Factor       N    Mean  StDev       95% CI
Izlaganje 1  5  205.20  17.12  (193.17, 217.23)
Izlaganje 2  4  227.70  10.63  (214.25, 241.15)
Izlaganje 3  4  191.77   6.16  (178.32, 205.23)
Izlaganje 4  5  139.38  12.03  (127.35, 151.41)

Pooled StDev = 12.5457
```

Pošto je p=0< α=0.05 odbacujemo Ho i zaključujemo da postoji razlika izmedju barem dva načina izlaganja robe.

4)



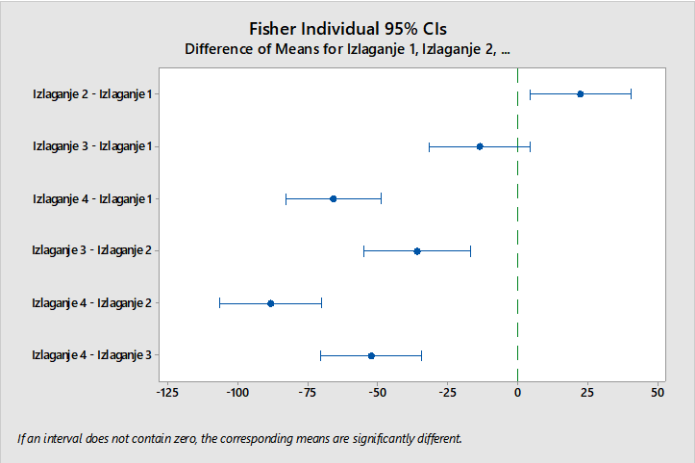


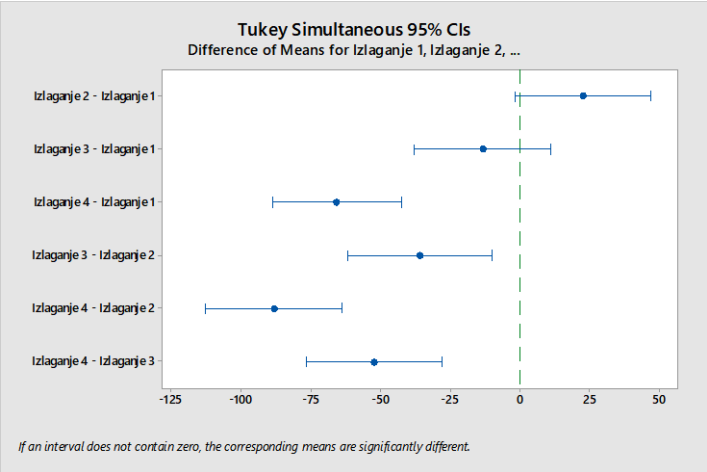
Reziduali imaju normalnu raspodelu.

5)
95% interval poverenja za način izlaganja robe 3 je

```
Izlaganje 3  4  191.77   6.16  (178.32, 205.23)
```

6)





Razlikuju se načini izlaganja koji ne sadrže nulu.
Fišer i Tukey daju isti rezultat:
Medjusobno se razlikuju:
Izlaganje 1 i izlaganje 4
Izlaganje 2 i izlaganje 3
Izlaganja 2 i izlaganje 4
Izlaganje 3 i izlaganje 4.
To nam potvrdjuje i Minitab izlaz grupisanja:

Tukey Pairwise Comparisons

```
Grouping Information Using the Tukey Method and 95% Confidence

Factor       N    Mean  Grouping
Izlaganje 2  4  227.70  A
Izlaganje 1  5  205.20  A B
Izlaganje 3  4  191.77    B
Izlaganje 4  5  139.38      C

Means that do not share a letter are significantly different.
```

Fisher Pairwise Comparisons

```
Grouping Information Using the Fisher LSD Method and 95% Confidence

Factor       N    Mean  Grouping
Izlaganje 2  4  227.70  A
Izlaganje 1  5  205.20    B
```

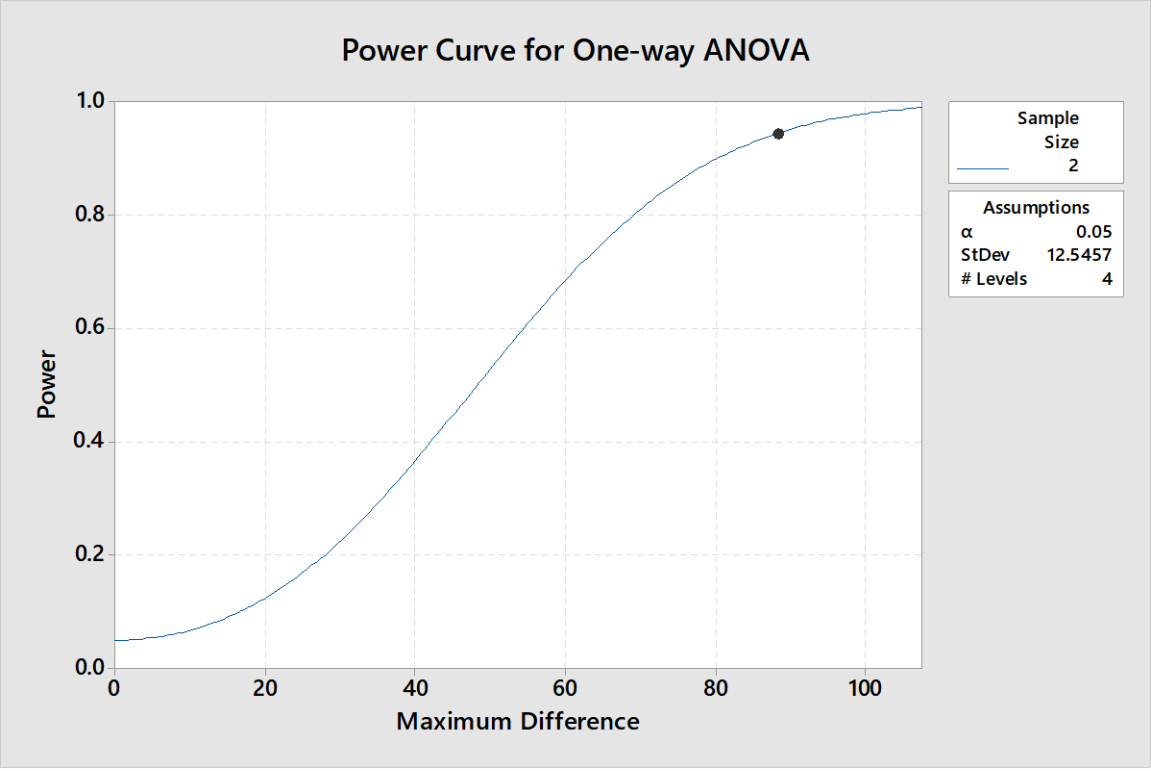
```
Izlaganje 3   4  191.77    B
Izlaganje 4   5  139.38      C

Means that do not share a letter are significantly different.
```

7)
Najbolji je način izlaganja 2. Srednja vrednost količine prodate robe je najveća kada je roba izložena na način 2.

8)
Snaga testa da bude najmanje 0,85
α=0.10
Minitab nam je dao: `Pooled StDev = 12.5457`

Power and Sample Size

```
One-way ANOVA

α = 0.05  Assumed standard deviation = 12.5457

Factors: 1  Number of levels: 4


   Maximum  Sample  Target
Difference    Size   Power  Actual Power
     88.32       2    0.85      0.944630

The sample size is for each level.
```



Dovoljna su 2 merenja da snaga testa bude najmanje 0,85,