

## Zadatak ANOVA 2

1)

Ho: nema razlike izmedju lekova, tj. Dejstvo svih lekova je jednako, tj. Srednja vrednost broja dana da se stabilizuje nivo šećera u krvi je podjednaka za sve lekove.

Ha: barem dva leka imaju različitu srednju vrednost broja dana potrebnih da se stabilizuje nivo šećera u krvi.

$\alpha=0.05$

### One-way ANOVA: Lek A, Lek B, Lek C, Lek D, Lek E

#### Method

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

Equal variances were assumed for the analysis.

#### Factor Information

Factor	Levels	Values
Factor	5	Lek A, Lek B, Lek C, Lek D, Lek E

#### Analysis of Variance

Source	DF	Seq SS	Contribution	Adj SS	Adj MS	F-Value	P-Value
Factor	4	316.5	56.77%	316.5	79.117	8.21	0.000
Error	25	241.0	43.23%	241.0	9.640		
Total	29	557.5	100.00%				

#### Model Summary

S	R-sq	R-sq(adj)	PRESS	R-sq(pred)
3.10483	56.77%	49.85%	347.04	37.75%

#### Means

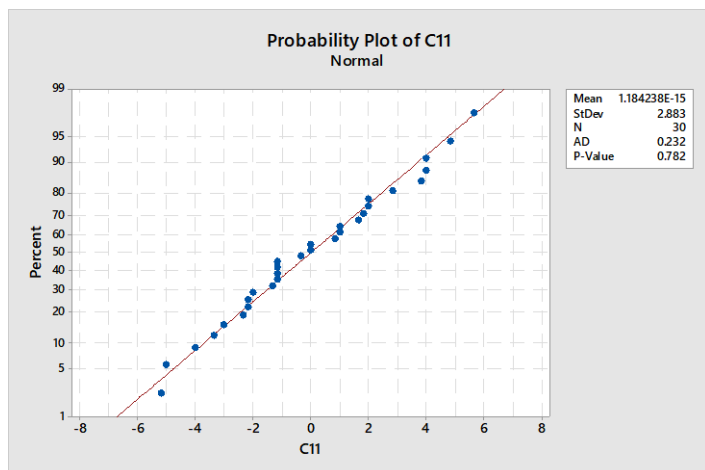
Factor	N	Mean	StDev	95% CI
Lek A	6	11.33	3.27	( 8.72, 13.94)
Lek B	6	15.00	3.03	(12.39, 17.61)
Lek C	6	21.00	3.16	(18.39, 23.61)
Lek D	6	15.17	3.43	(12.56, 17.78)
Lek E	6	13.17	2.56	(10.56, 15.78)

Pooled StDev = 3.10483

P=0,00 manje je od praga značajnosti pa odbacujemo Ho i zaključujemo da postoji razlika izmedju barem dva leka.

2)

#### Analiza reziduala



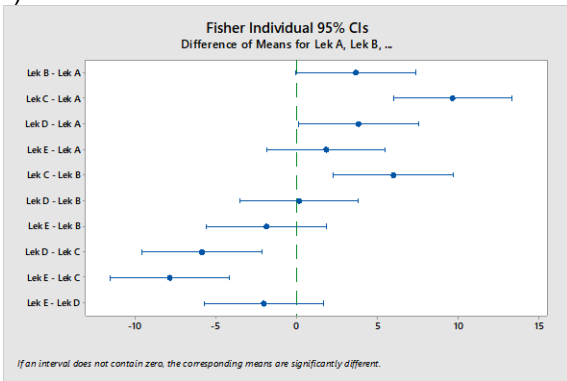
Reziduali imaju normalnu raspodelu.

3)

95% interval poverenja za lek A i D:

Factor	N	Mean	StDev	95% CI
Lek A	6	11.33	3.27	<b>(8.72, 13.94)</b>
Lek D	6	15.17	3.43	<b>(12.56, 17.78)</b>

4)



### Fisher Pairwise Comparisons

Grouping Information Using the Fisher LSD Method and 95% Confidence

Factor	N	Mean	Grouping
Lek C	6	21.00	A
Lek D	6	15.17	B
Lek B	6	15.00	B C
Lek E	6	13.17	B C
Lek A	6	11.33	C

Means that do not share a letter are significantly different.

Razlikuju se lekovi koji ne sadrže nulu ili oni koji imaju različito slovo grupisanja.

Razlikuju se:

- lek A i lek C,
- lek A i lek D,
- lek B i lek C,
- lek C i lek D,
- lek C i lek E.

5)

Najefikasniji je lek A jer ima najmanju srednju vrednost što znači da je najmanje dana potrebno da se reguliše nivo šećera u krvi pacijenata.

6)

Pooled StDev = 3.10483

Snaga testa najmanje 0,99

### Power and Sample Size

One-way ANOVA

$\alpha = 0.05$  Assumed standard deviation = 3.1

Factors: 1 Number of levels: 5

Maximum Difference	Sample Size	Target Power	Actual Power
9.67	7	0.99	0.996208

The sample size is for each level.

Potrebno je najmanje 7 merenja da bi snaga testa bila 99%.

