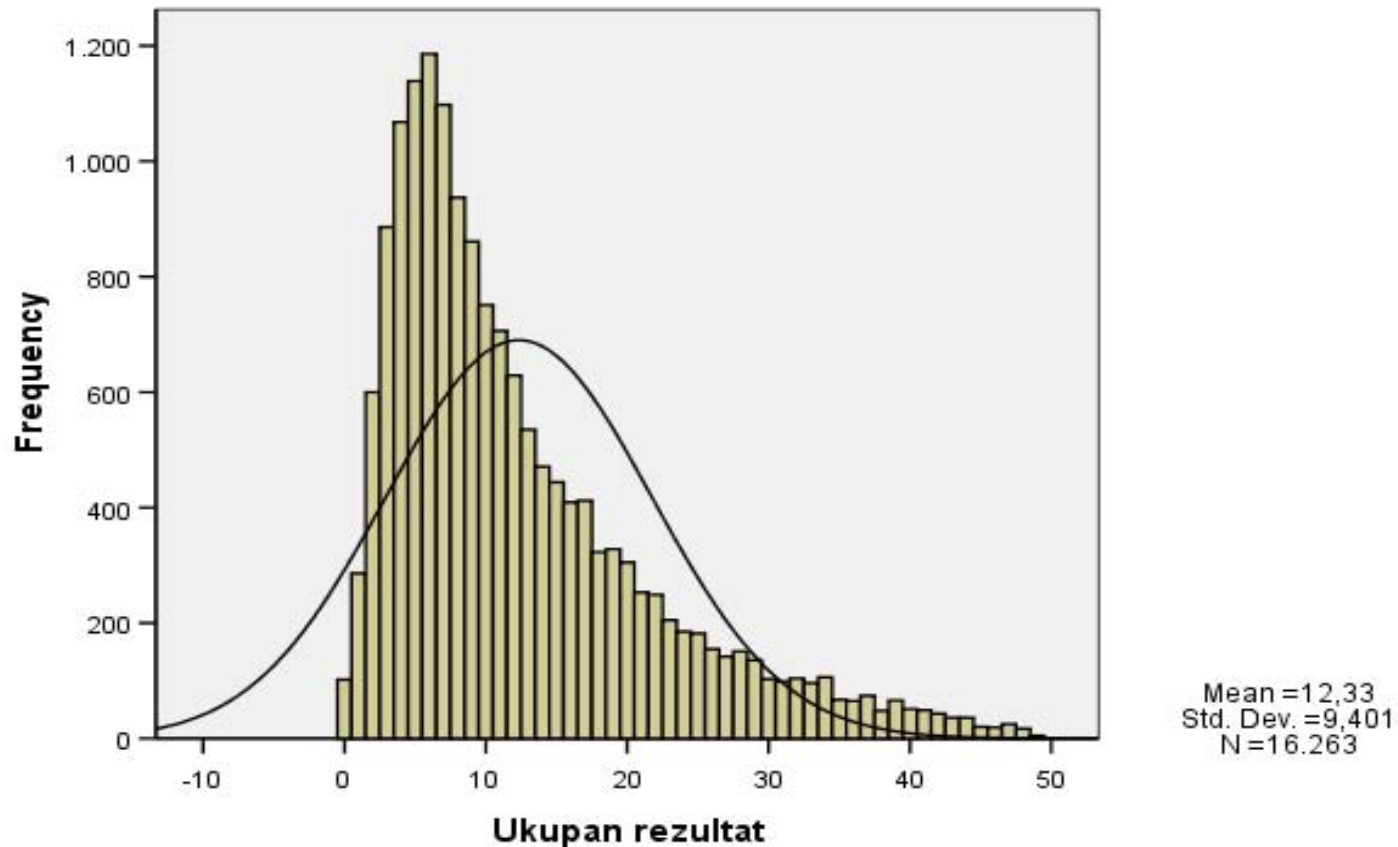


**METRIJSKA ANALIZA NACIONALNOGA
ISPITA IZ MATEMATIKE
(VIŠA RAZINA)
PROVEDENOGA U SVIBNJU 2007.**

**Istraživačko-razvojni odjel
NCVVO**

Raspodjela ukupnih rezultata

Histogram



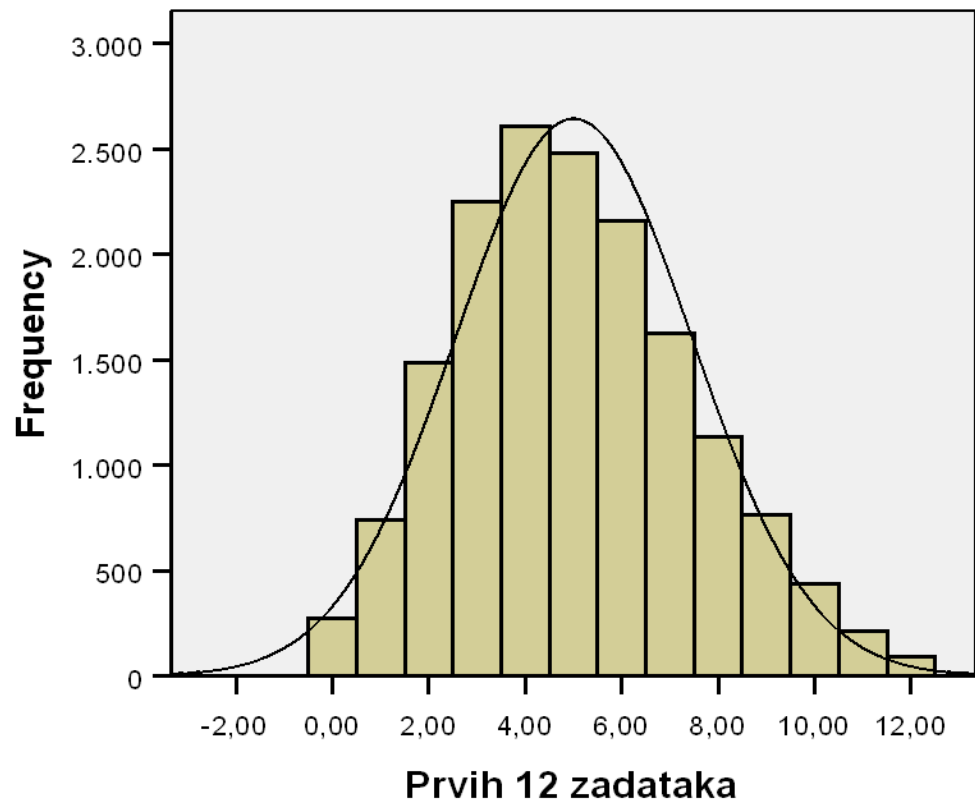
- $N = 16263$
- $M = 12.33$
- $SD = 9.401$
- $MIN = 0; MAX = 49$
- Max. mogući rezultat = 49
- Cronbach $\alpha = 0.909$

Težina zadatka	Redni broj zadatka
Vrlo težak (0 – 0,2)	14, 16, 19, 20, 22, 23, 24, 25, 26a, 25b, 27a, 27b, 28, 29, 30a, 30b
Težak (0,21 – 0,4)	4, 5, 6, 7, 10, 12, 15, 17, 21
Srednje težak (0,41 – 0,6)	2, 3, 8, 9, 11, 13, 18
Lagan (0,61 – 0,80)	1
Vrlo lagan (0,81 – 1)	



$M = 5,0$
 $SD = 2,454$

Prvih 12 zadataka

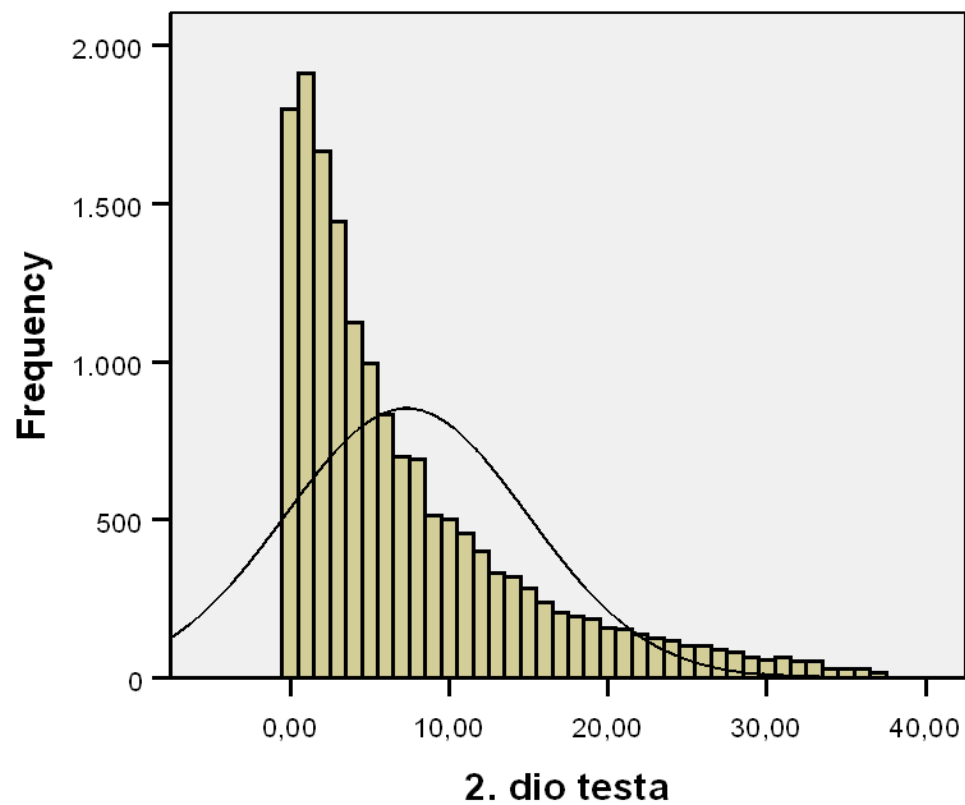


Mean =5,0041
Std. Dev. =2,
45369
N =16.263



$M = 7,32$
 $SD = 7,607$

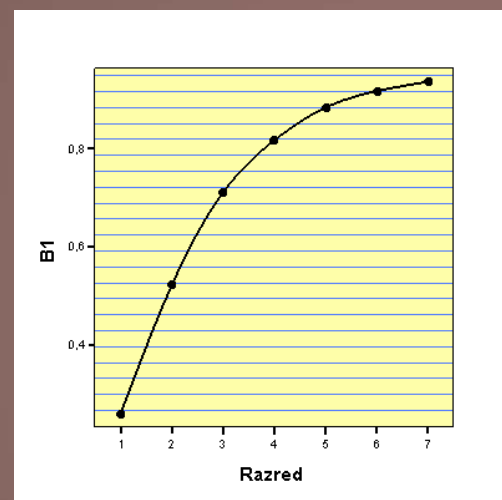
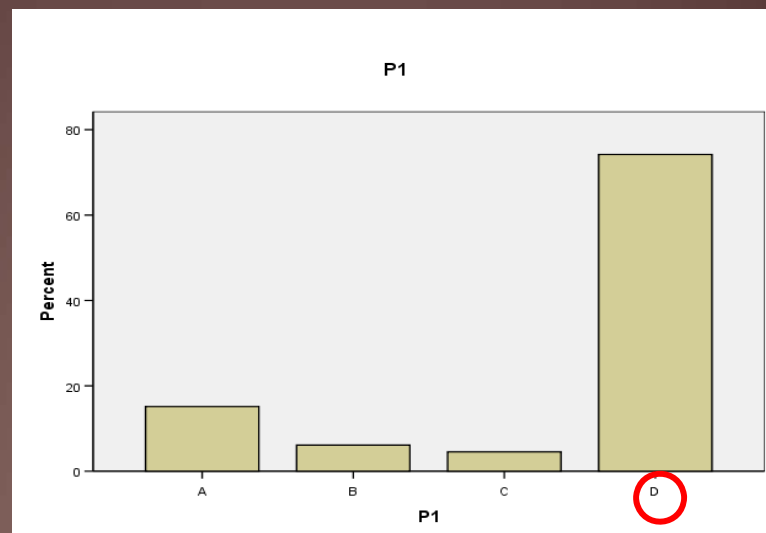
2. dio testa



Mean = 7,3197
Std. Dev. = 7,60719
N = 16.260

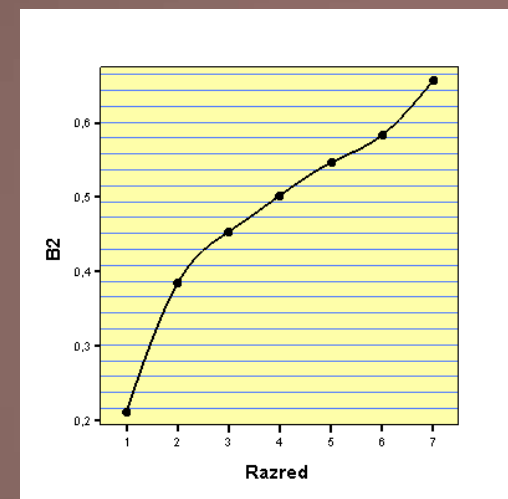
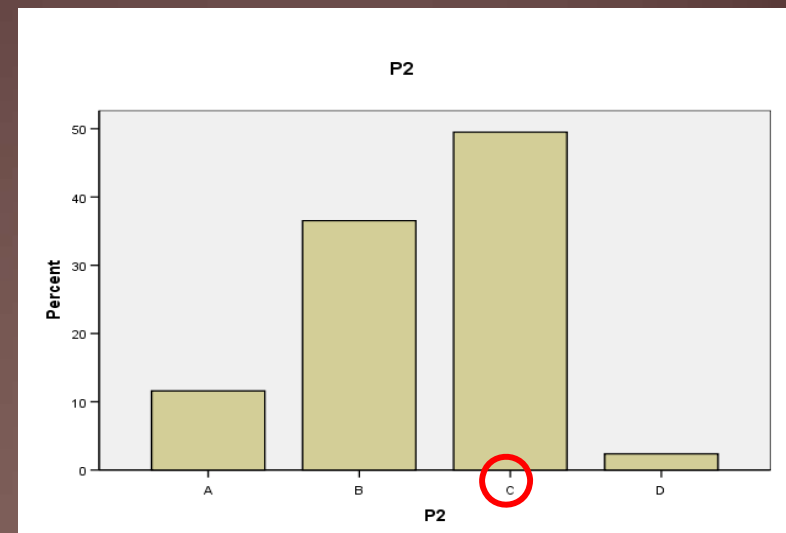
1. Jednadžba $3x^2+bx-30=0$ ima rješenja $x=-2$ i $x=5$. Tada je b jednako:

M	0.73
SD	0.444
ID	0.328
α - zadatak	0.908



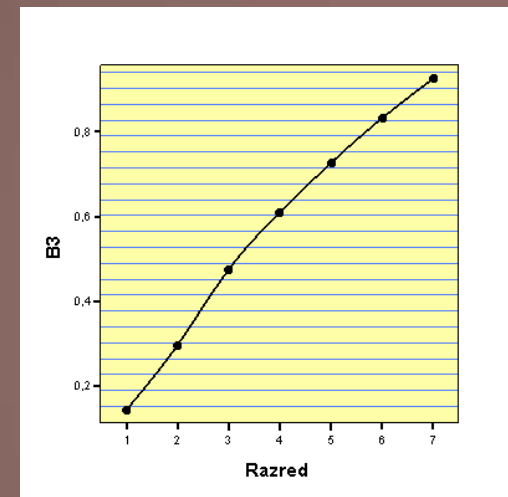
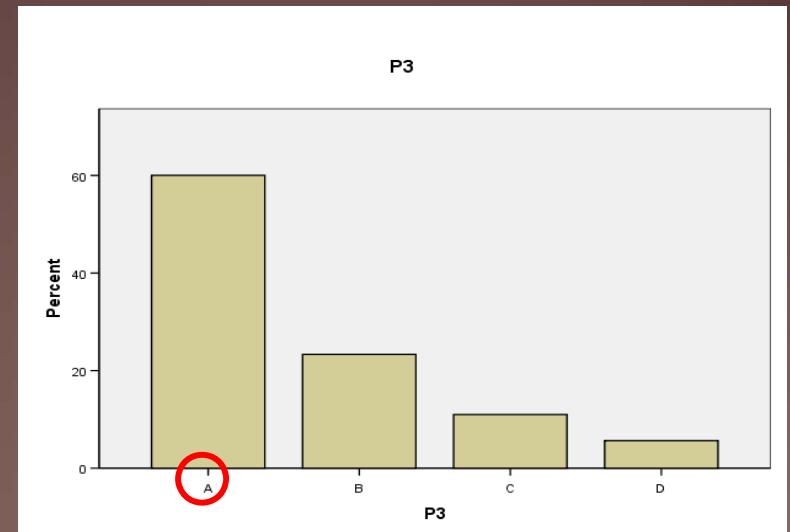
2. Broj a je za 3 veći od pozitivnoga broja b . Njihov omjer je 5:3. Tada je a jednak:

M	0.48
SD	0.500
ID	0.175
α - zadatak	0.910



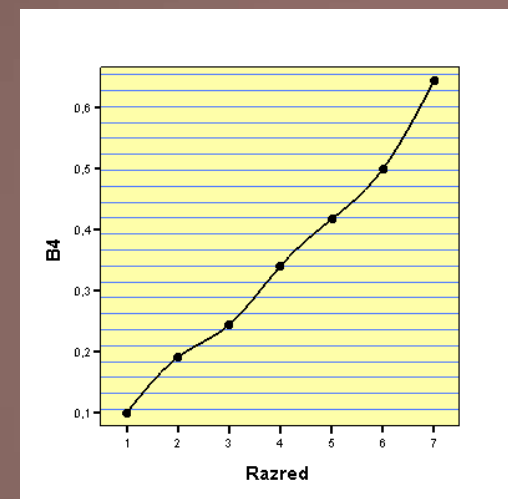
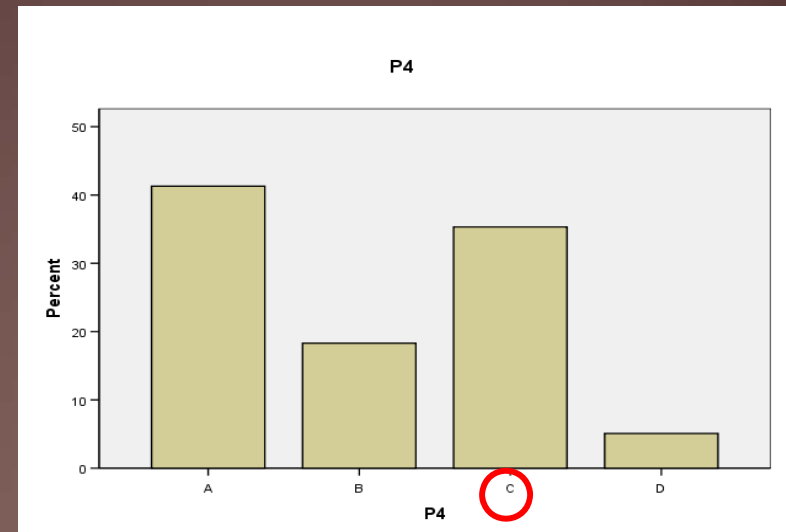
3. Opseg paralelograma na slici je 80 cm. Površina mu je:

M	0.58
SD	0.494
ID	0.413
α - zadatak	0.907



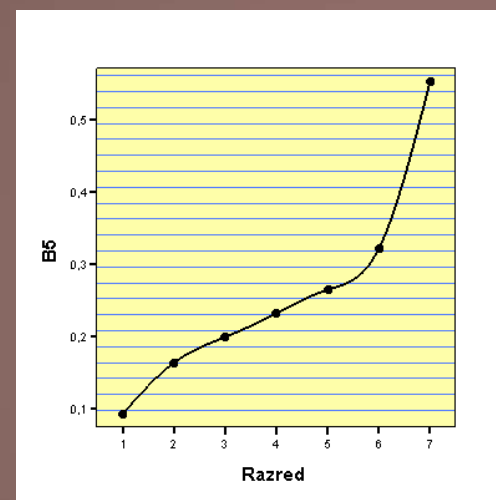
4. Jedna astronomska jedinica iznosi $1.49 \cdot 10^{11}$ m. To je:

M	0.35
SD	0.476
ID	0.305
α - zadatak	0.909



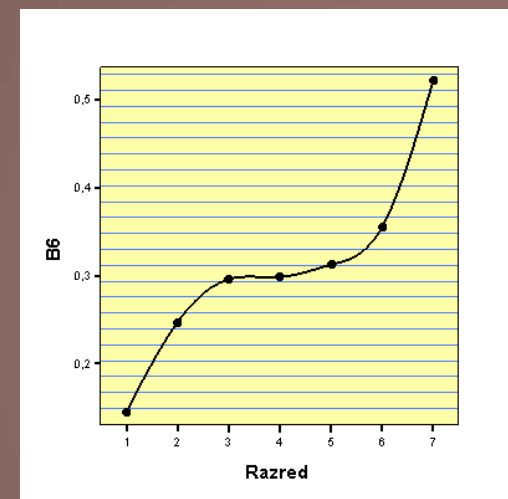
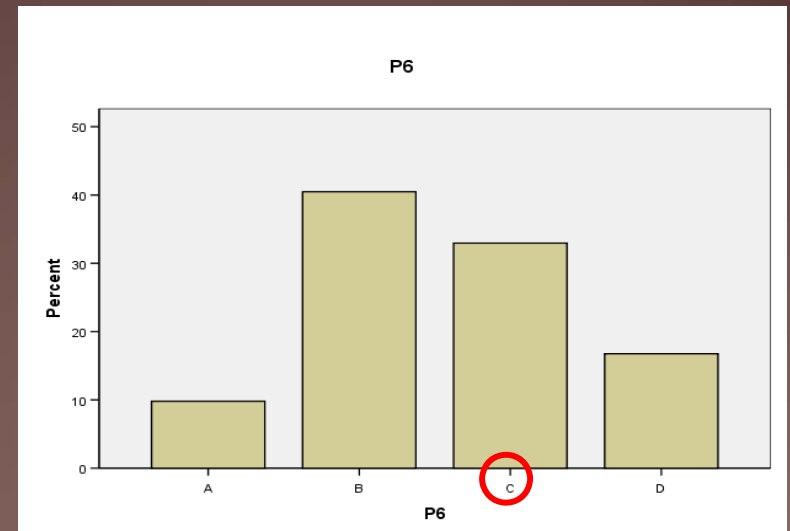
$$5. \left(6 - 3a + \frac{18a^2}{6 + 3a} \right) : \frac{9a^4 - 144}{6a^3 + 48} =$$

M	0.26
SD	0.440
ID	0.283
α - zadatak	0.909



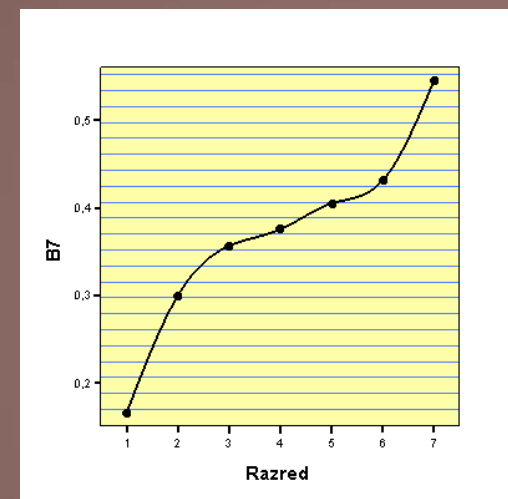
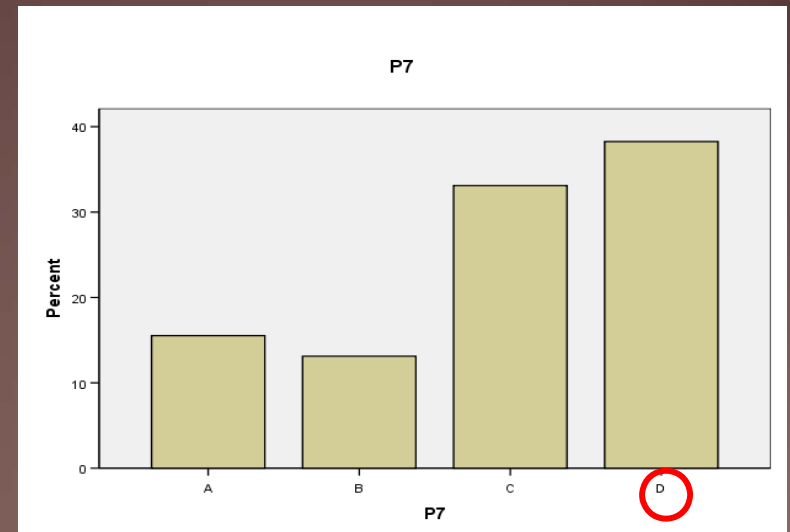
6. Kut među vektorima $\vec{AB} = -3\vec{i} - 4\vec{j}$ i $\vec{CD} = 3\vec{i} - 4\vec{j}$ jednak je:

M	0.31
SD	0.464
ID	0.184
α - zadatak	0.910



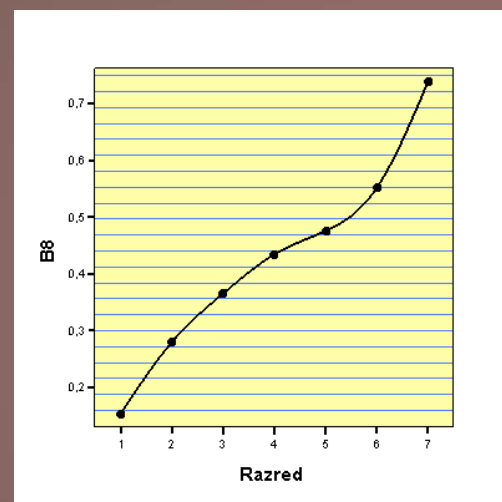
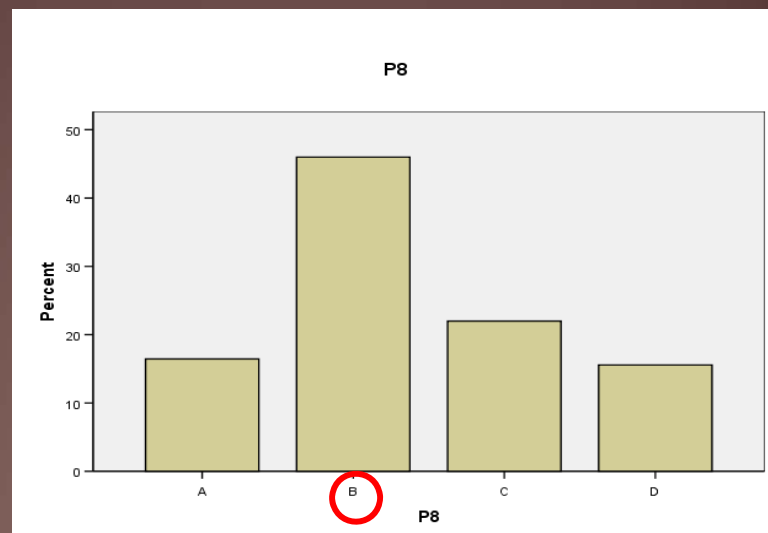
7. Rabeći džepno računalo, odredite koji je od navedenih brojeva najveći.

M	0.37
SD	0.484
ID	0.151
α - zadatak	0.911



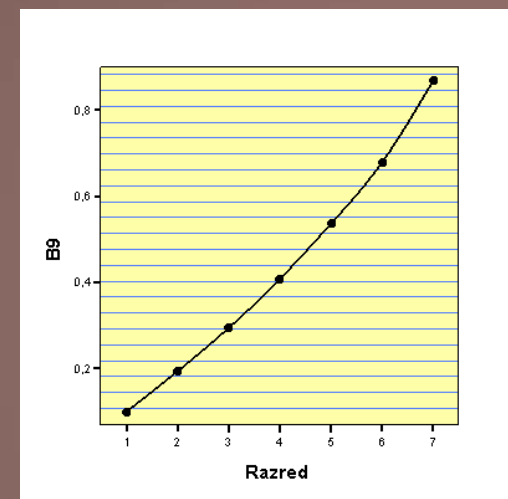
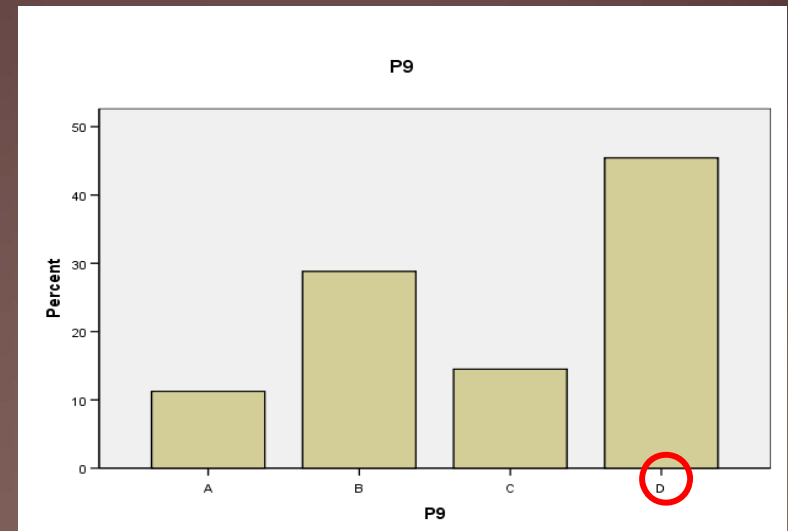
8. Asimptota hiperbole je pravac $y=2x$.
Na hiperboli je točka (5,8). Jednadžba
hiperbole je:

M	0.43
SD	0.495
ID	0.295
α - zadatak	0.909



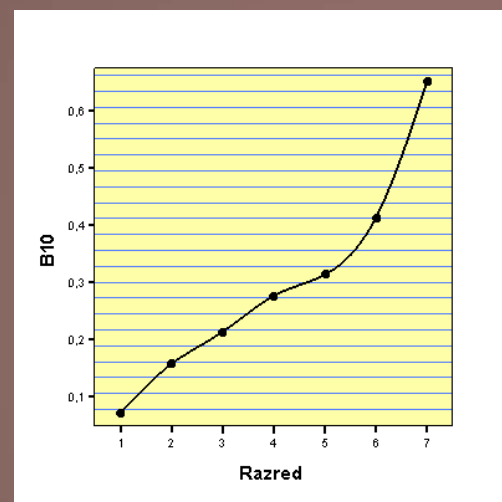
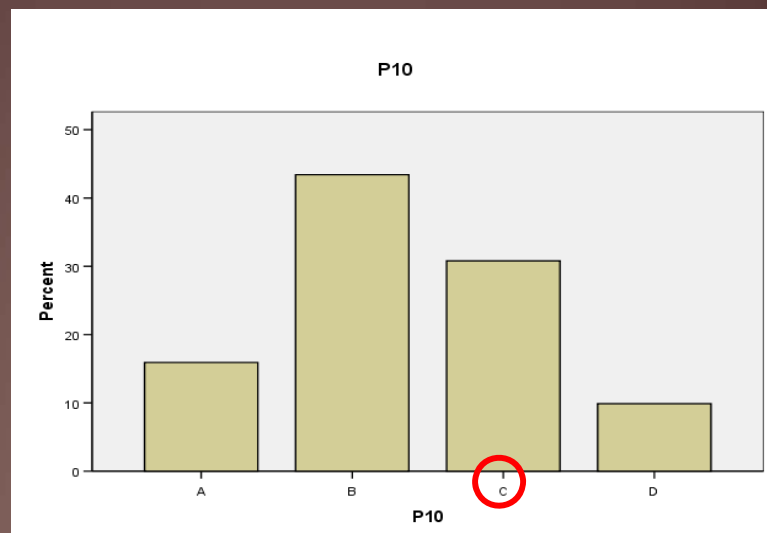
9. Jednadžba pravca koji je usporedan s nacrtanim pravcem i prolazi točkom (0,7) je:

M	0.44
SD	0.496
ID	0.442
α - zadatak	0.907



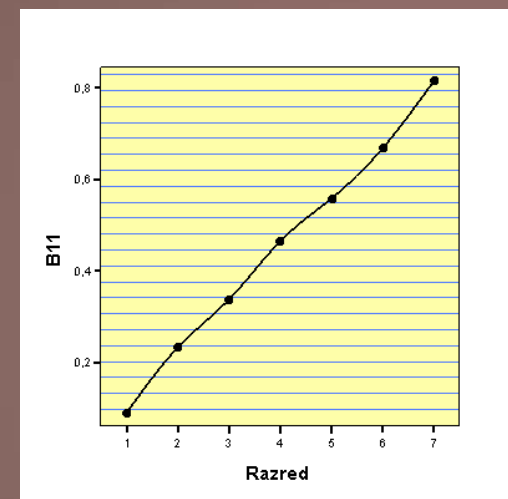
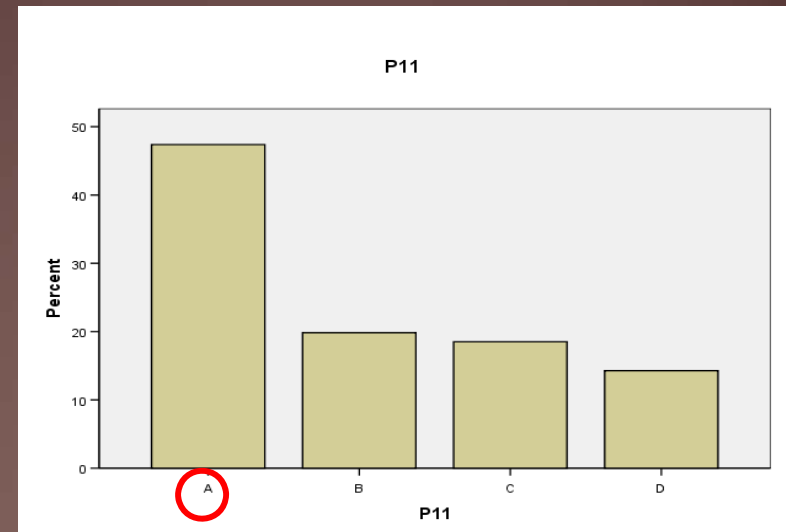
10. Cijena iznajmljivanja bicikla je najprije povećana 25% pa snižena 22%. Što treba učiniti s cijenom da postane jednaka početnoj?

M	0.30
SD	0.459
ID	0.345
α - zadatak	0.908



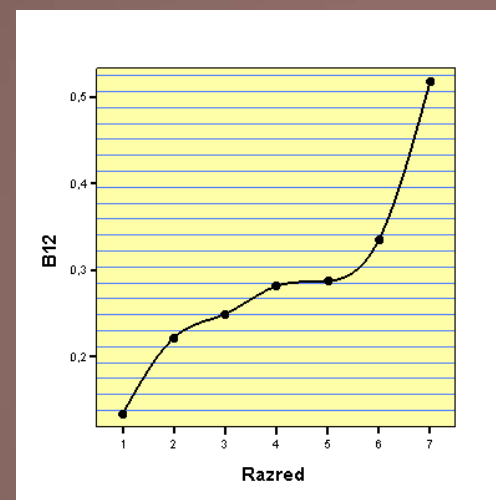
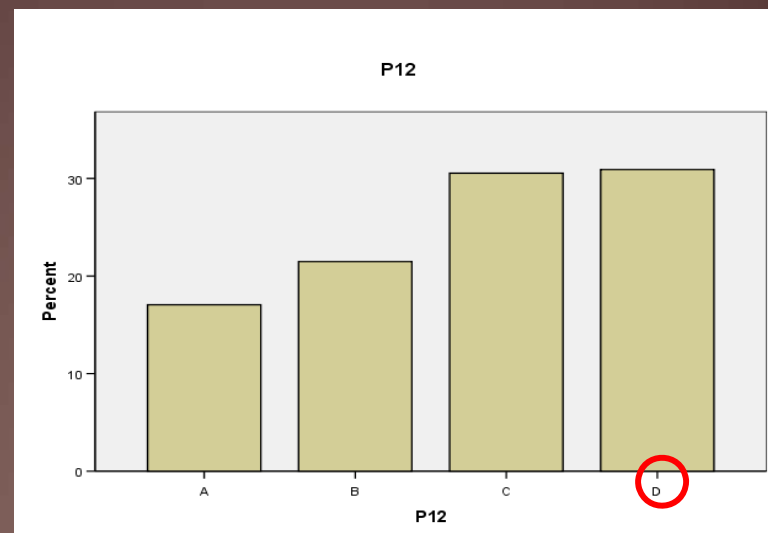
11. Sustav $\begin{cases} (a+3)x - 3y = -1 \\ 8x + 12y = 4 \end{cases}$ ima
 beskonačno mnogo rješenja ako je:

M	0.46
SD	0.498
ID	0.387
α - zadatak	0.908



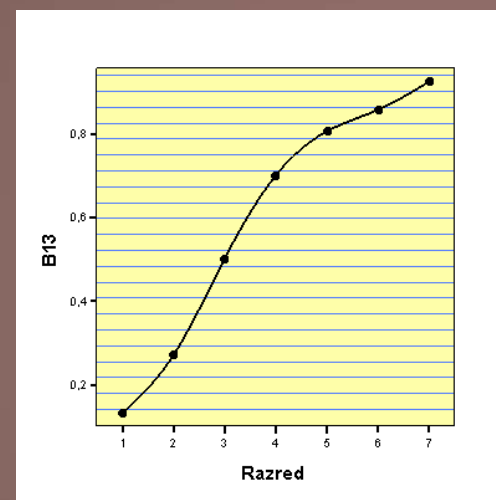
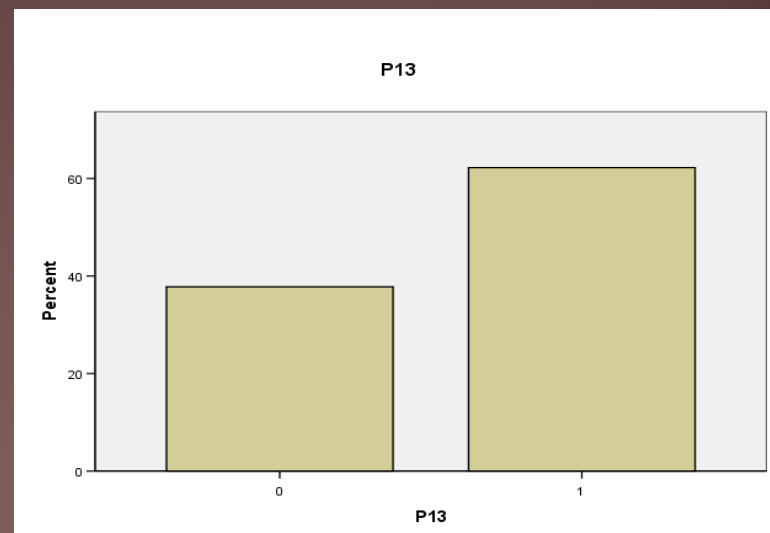
12. Ako je $x = \sqrt[3]{\sqrt{2} + 1} - \sqrt[3]{\sqrt{2} - 1}$, onda je:

M	0.28
SD	0.454
ID	0.208
α - zadatak	0.910



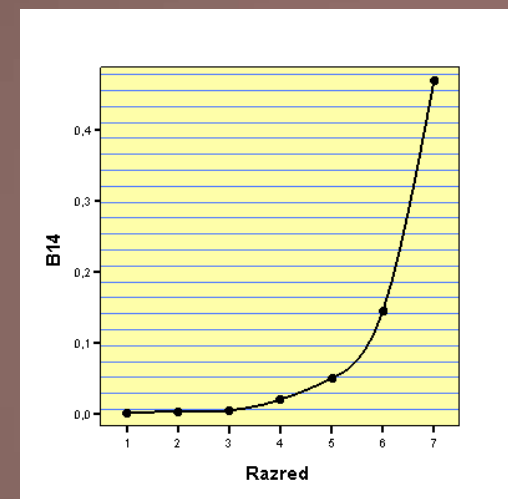
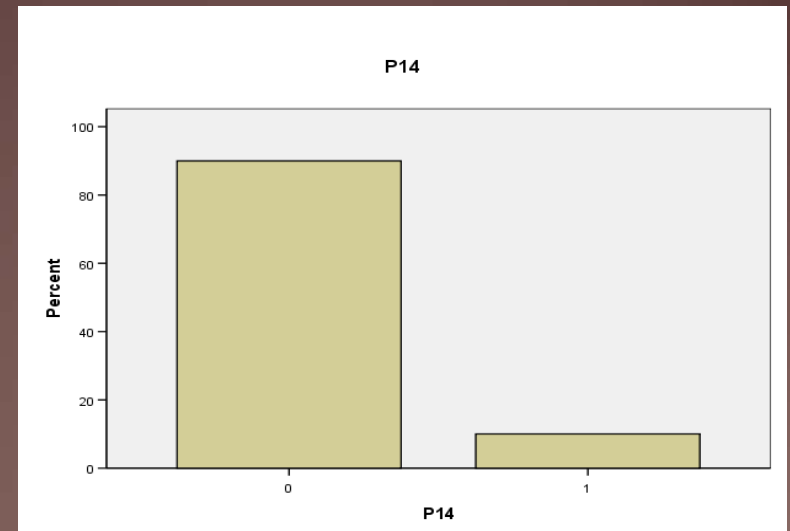
13. Riješite jednađbu $t^2 - t - 2 = 0$

M	0.60
SD	0.489
ID	0.418
α - zadatak	0.907



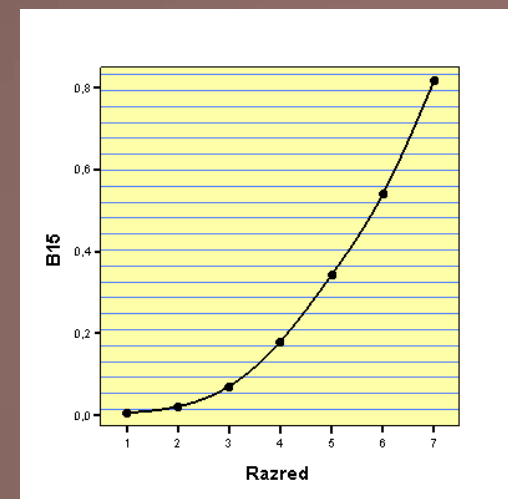
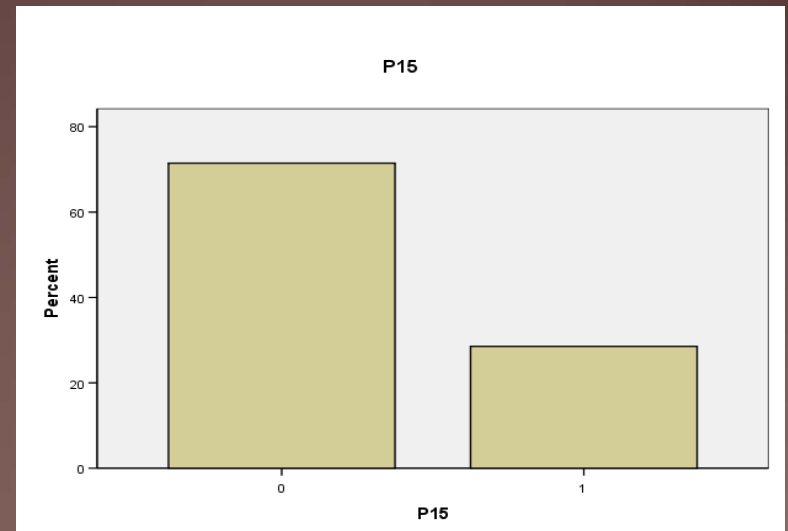
14. Riješite jednađbu $x^2 - 4 > 0$.

M	0.10
SD	0.296
ID	0.534
α - zadatak	0.907



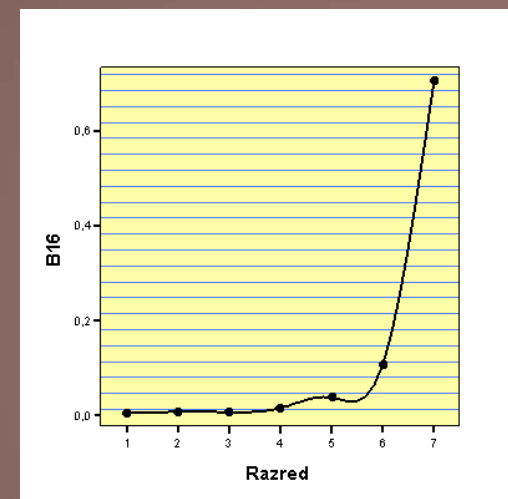
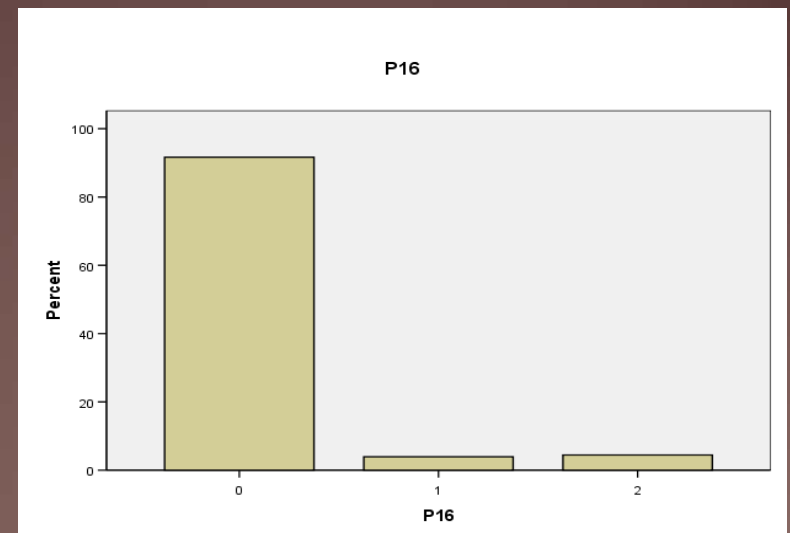
15. Izrazite a iz izraza
 $p = ab + (a + b) v$.

M	0.28
SD	0.447
ID	0.591
α - zadatak	0.905



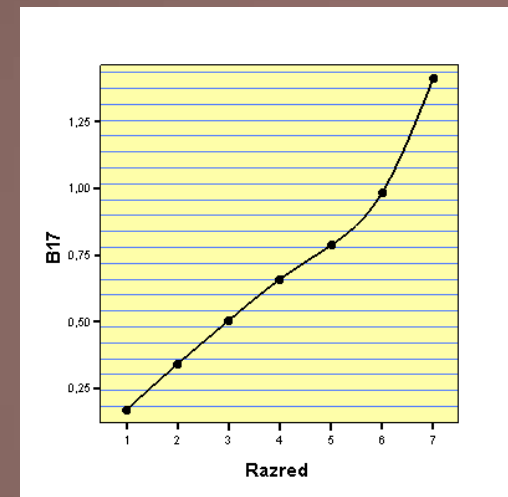
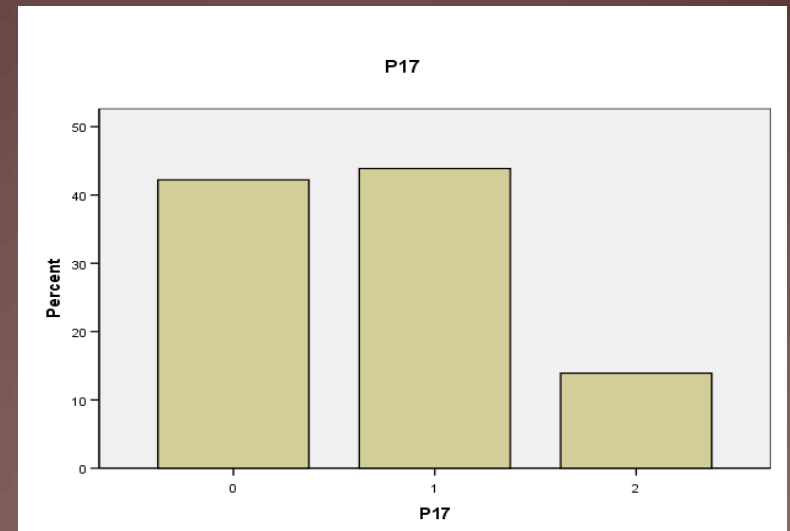
16. Odaberite a , $b...$

M	0.12
SD	0.454
ID	0.540
α - zadatak	0.906



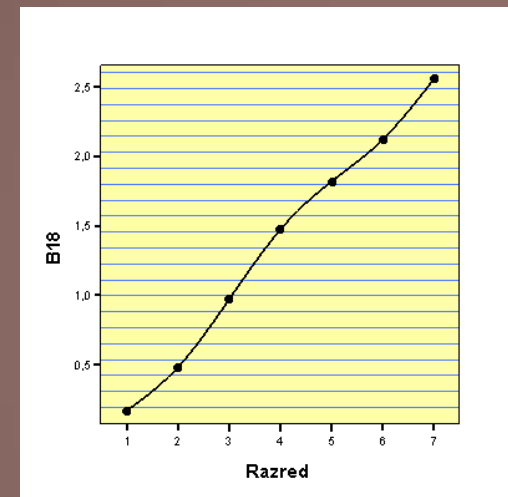
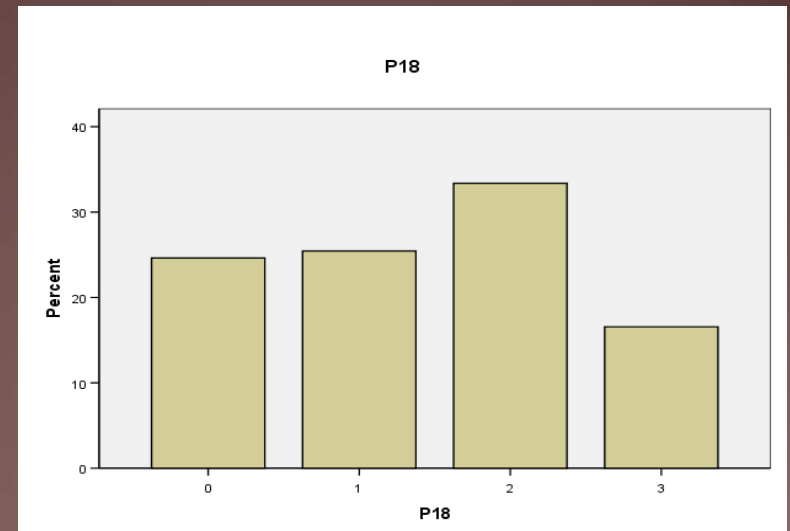
17. Funkcija je zadana grafom...

M	0.70
SD	0.694
ID	0.500
α - zadatak	0.906



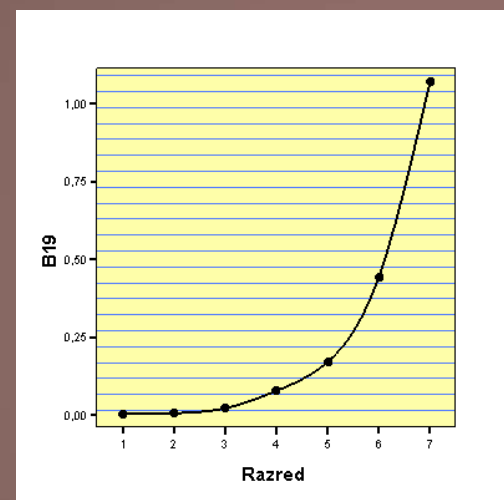
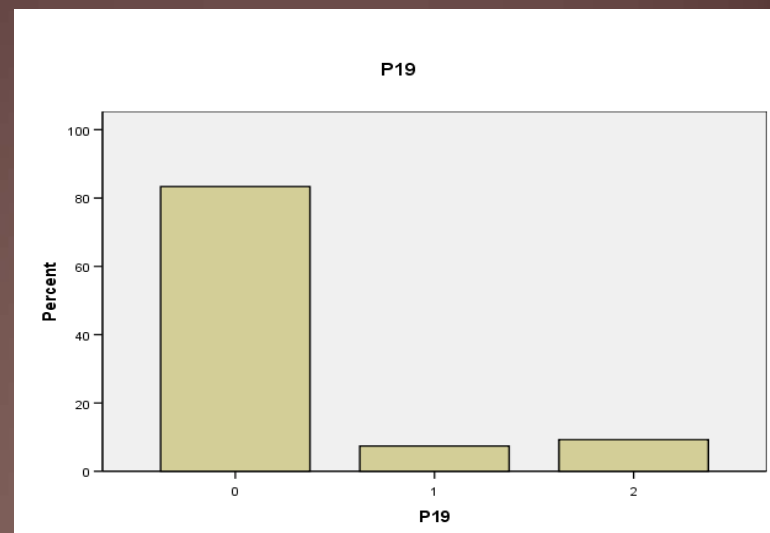
18. Zadane su točke
 $A (-1,2)$ i $B (3, -1)$...

M	1.38
SD	1.046
ID	0.627
α - zadatak	0.905



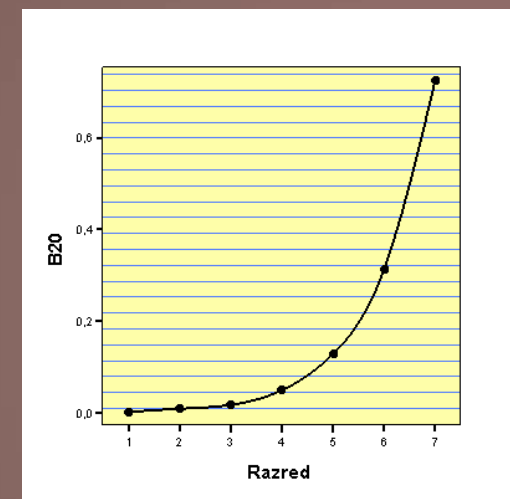
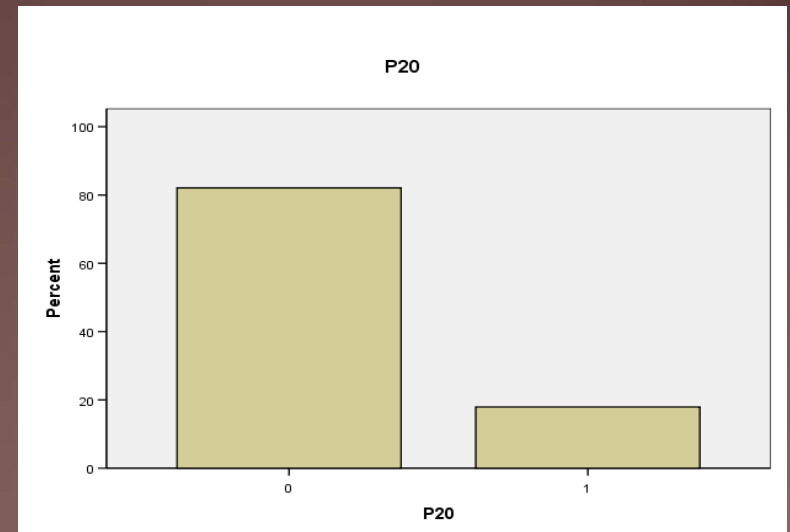
19. Skup točaka ravnine zadan jednadžbom...

M	0.25
SD	0.606
ID	0.571
α - zadatak	0.905



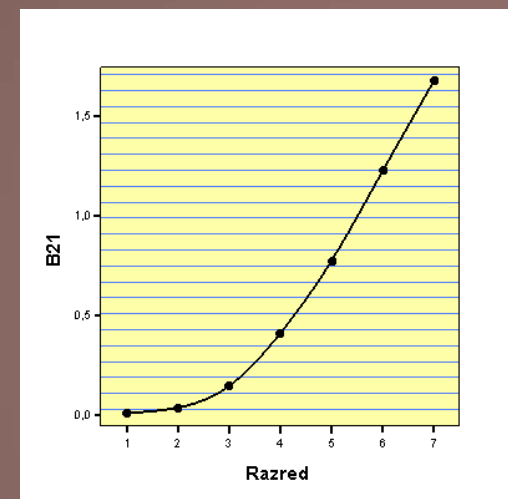
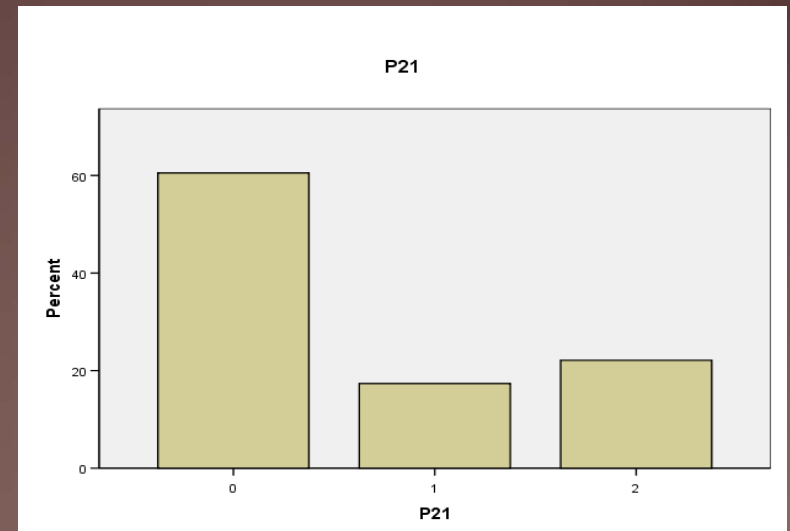
20. Na slici je graf funkcije...

M	0.17
SD	0.379
ID	0.652
α - zadatak	0.905



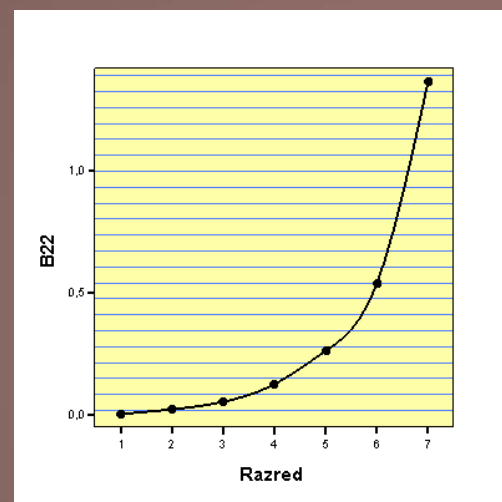
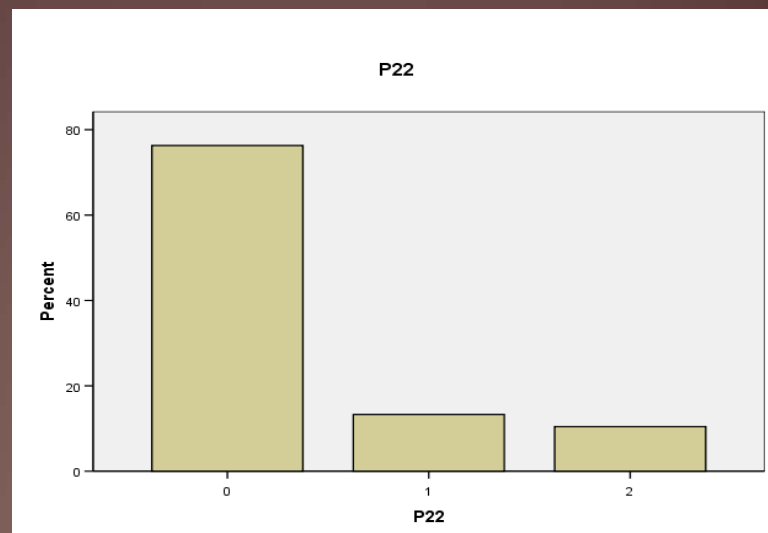
21. Zadana je kružnica...

M	0.60
SD	0.818
ID	0.659
α - zadatak	0.903



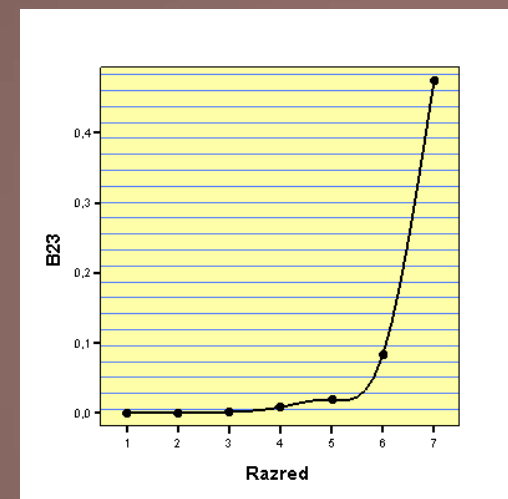
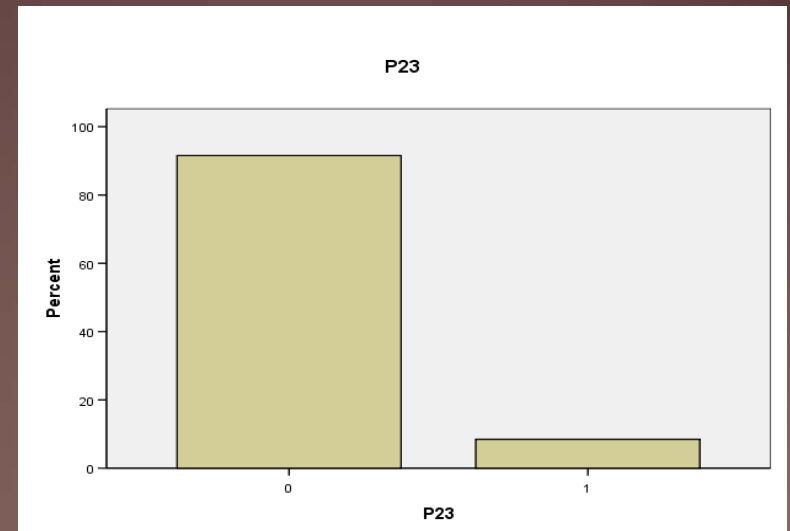
22. Nacrtajte grafove funkcija u zadanome koordinatnome sustavu...

M	0.33
SD	0.651
ID	0.664
α - zadatak	0.903



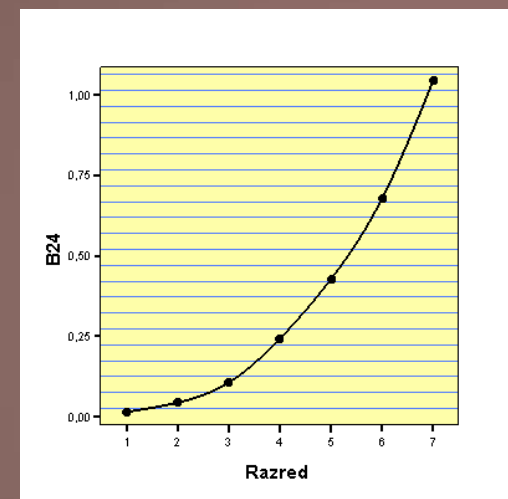
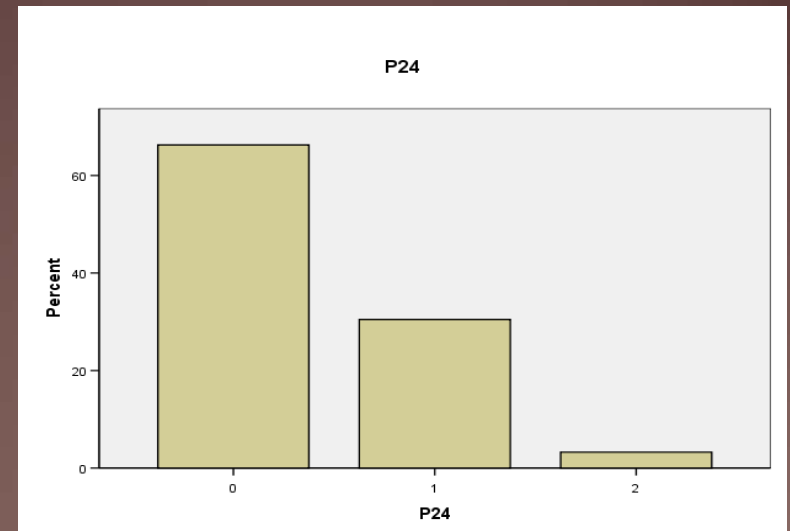
23. Za koju vrijednost x iz intervala...

M	0.08
SD	0.274
ID	0.578
α - zadatak	0.907



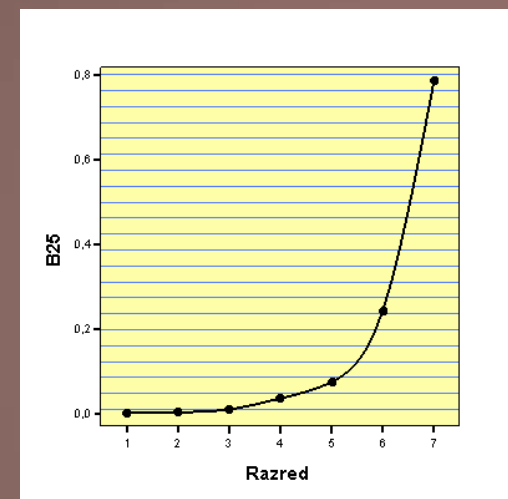
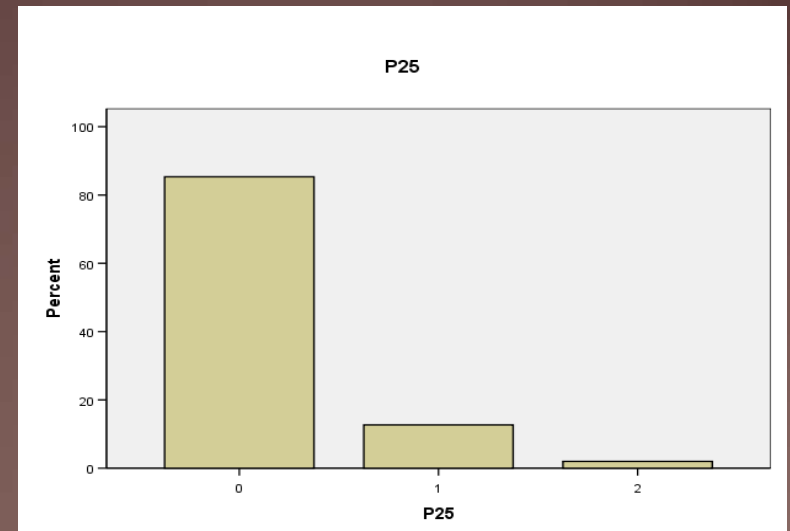
24. Polupravac CA je tangenta kružnice.

M	0.36
SD	0.541
ID	0.625
α - zadatak	0.904



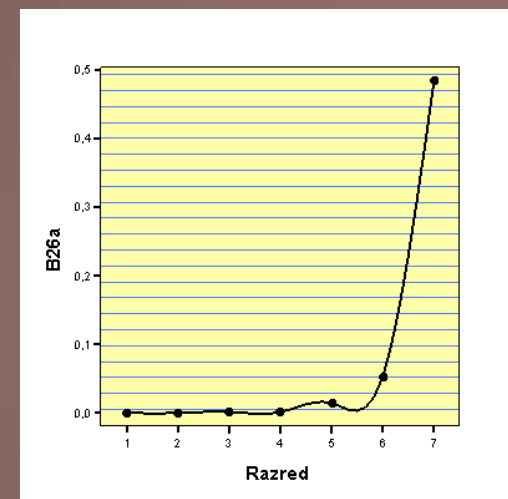
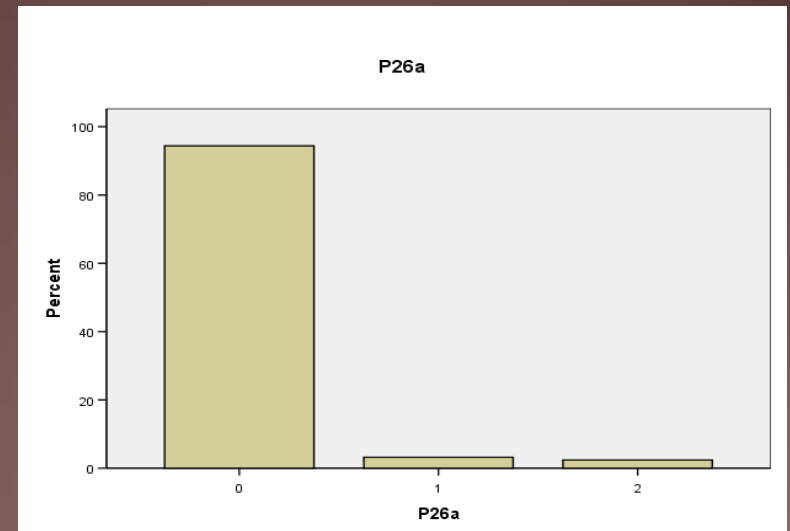
25. Zadana je funkcija...

M	0.16
SD	0.417
ID	0.641
α - zadatak	0.905



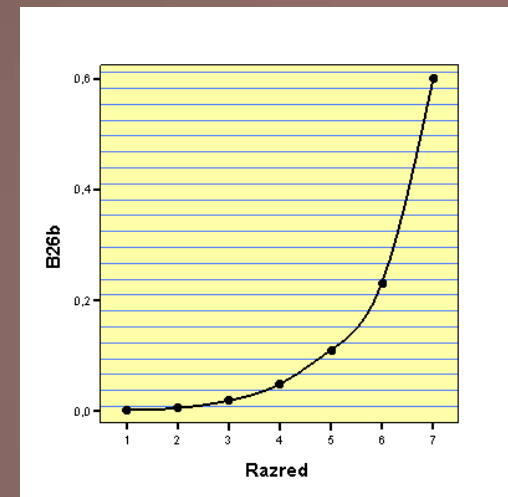
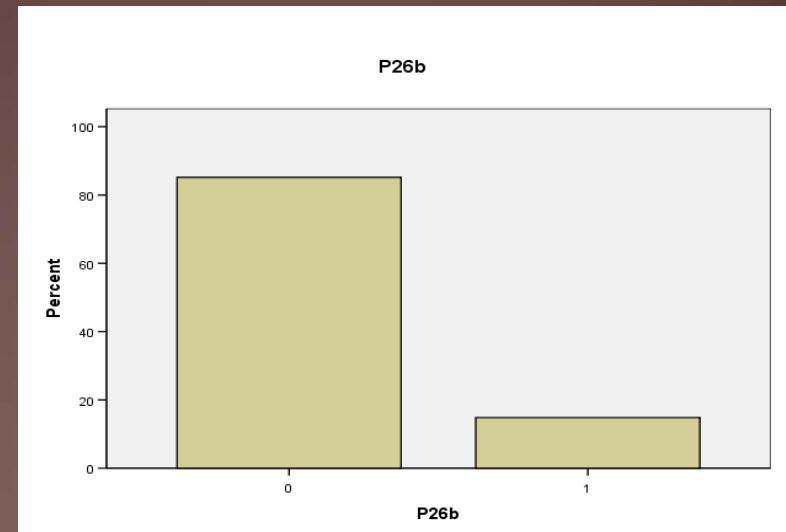
26.a Odredite funkcije.

M	0.08
SD	0.343
ID	0.498
α - zadatak	0.907



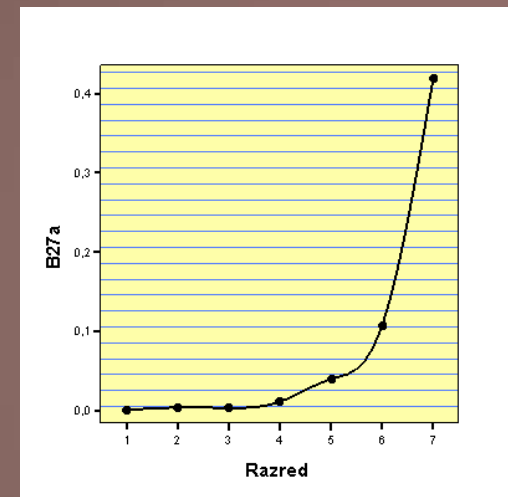
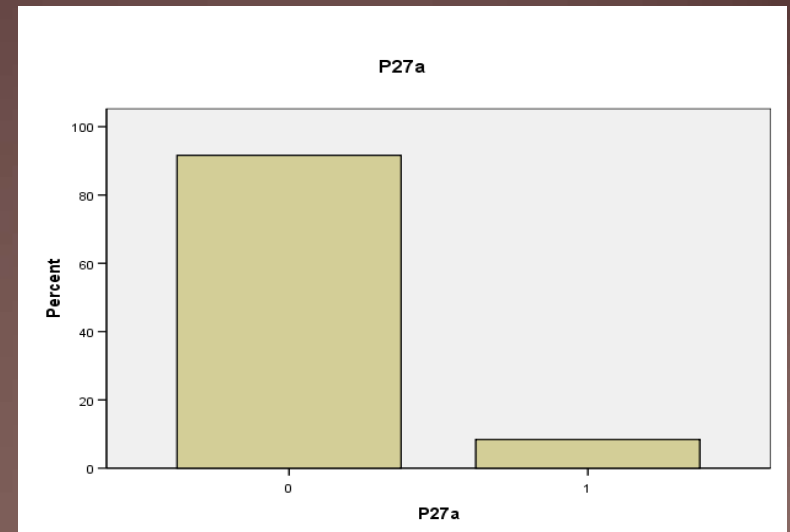
26.b Očitajte s grafa koliko rješenja ima jednačina...

M	0.14
SD	0.350
ID	0.564
α - zadatak	0.906



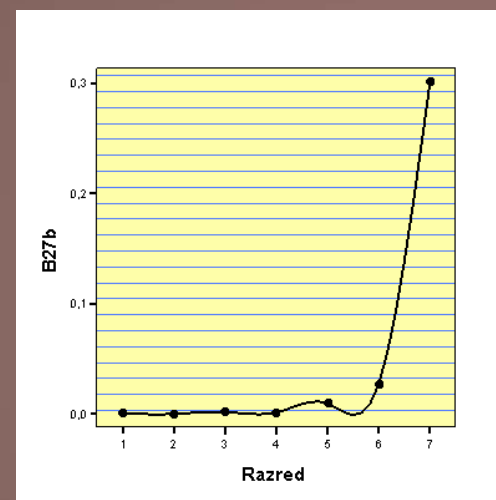
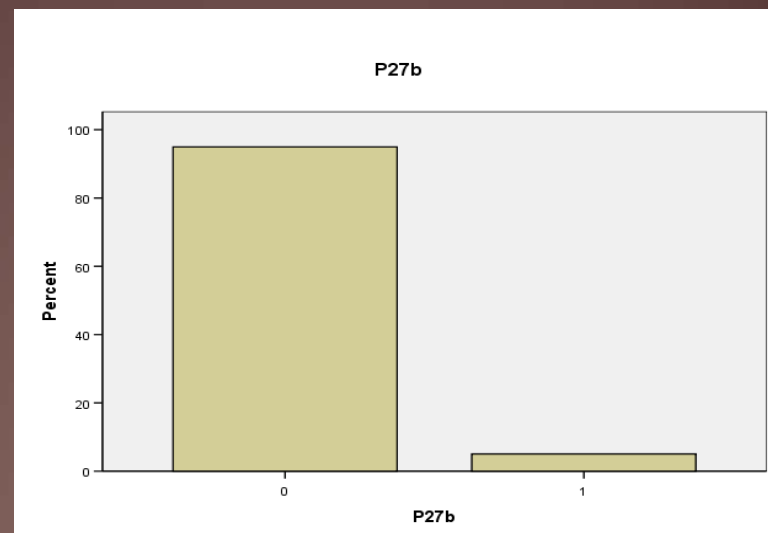
27.a Koliko je bilo bakterija 40 minuta prije početka mjerenja?

M	0.08
SD	0.273
ID	0.518
α - zadatak	0.907



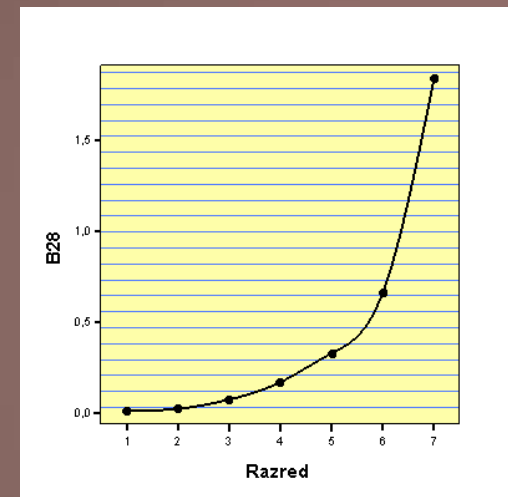
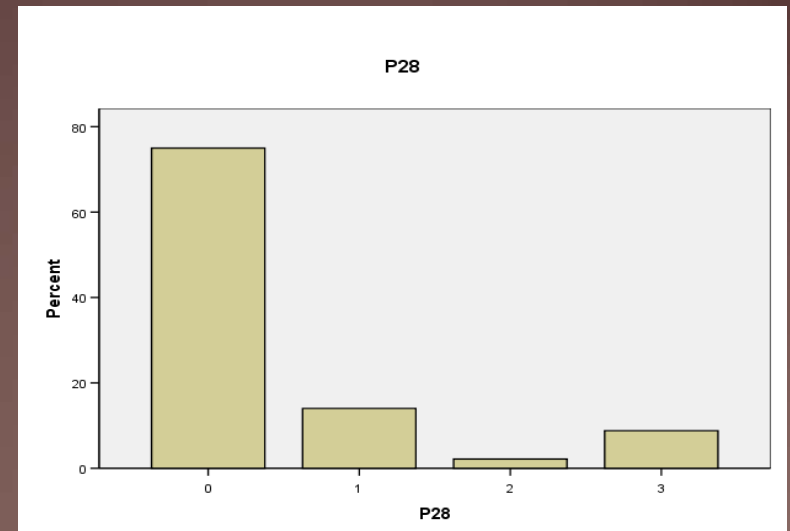
27.b Nakon koliko će vremena bakterija biti tisuću puta više?

M	0.05
SD	0.213
ID	0.503
α - zadatak	0.908



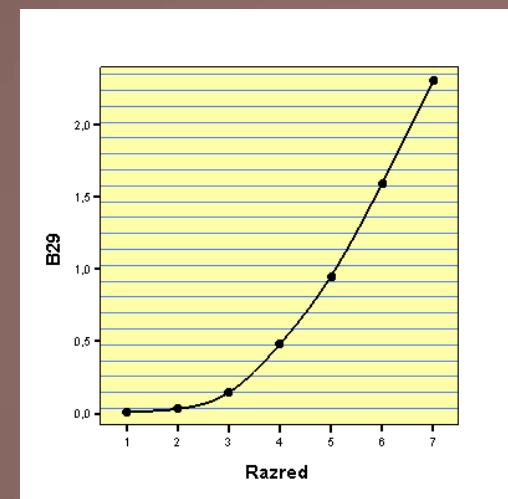
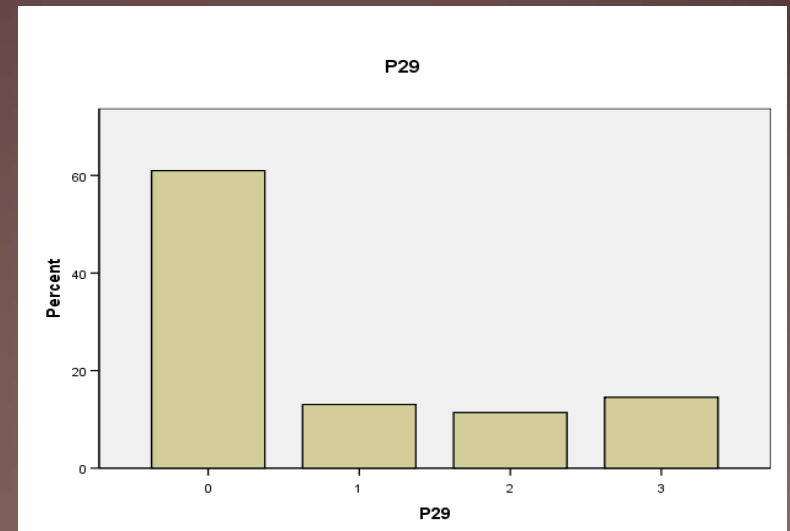
28. Rješite jednadžbu.

M	0.43
SD	0.894
ID	0.644
α - zadatak	0.903



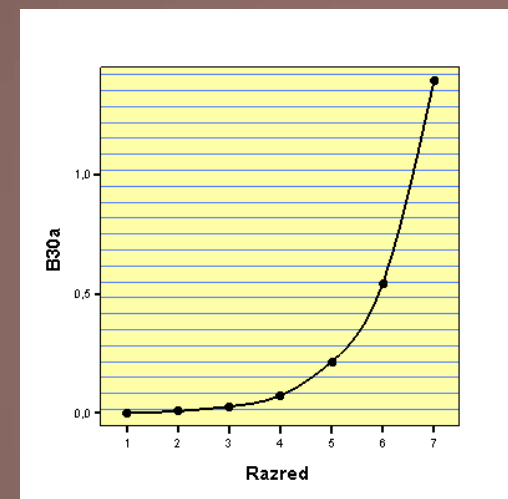
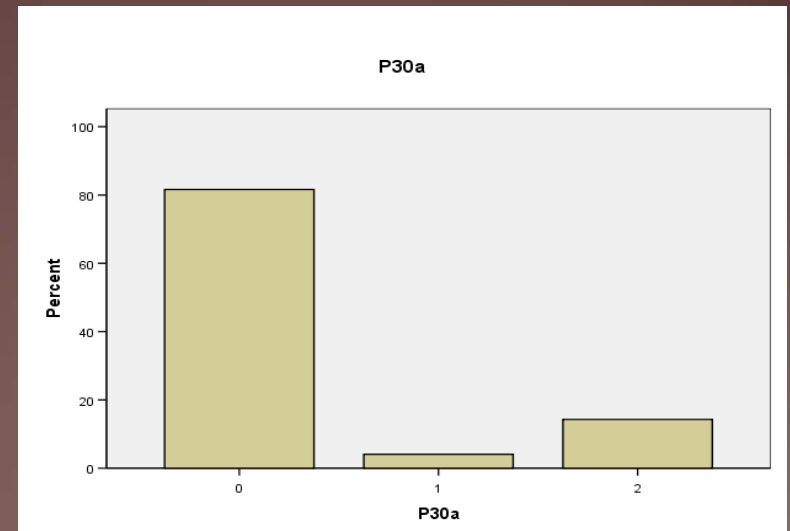
29. Odredite površinu osjenčanoga trokuta.

M	0.77
SD	1.115
ID	0.658
α - zadatak	0.904



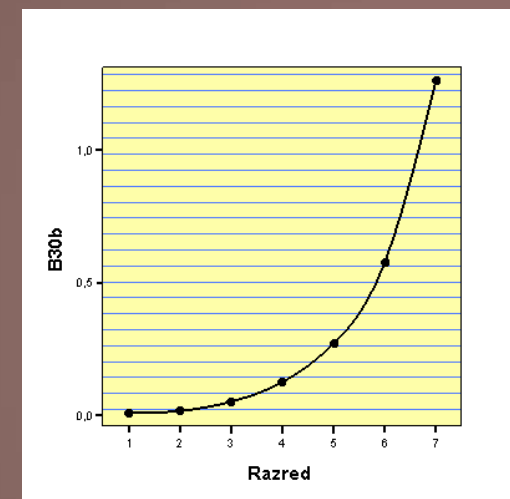
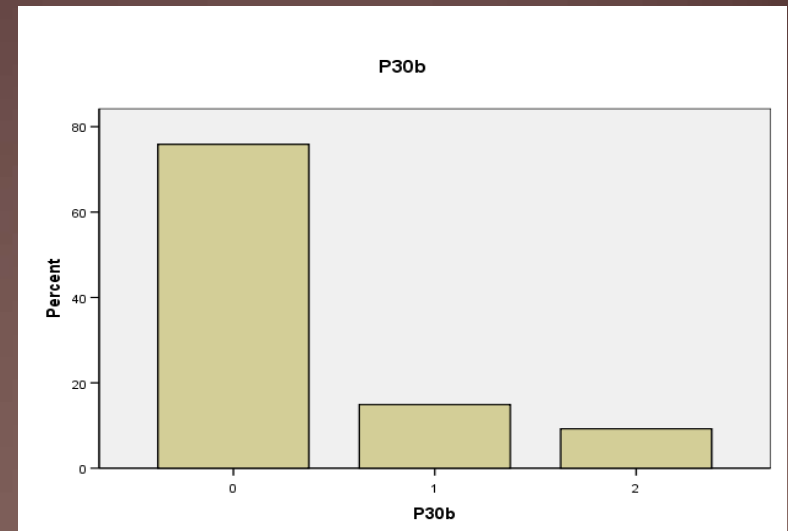
30.a Koliko je grama željeza potrebno za izradbu jedne kovanice od 50 lipa?

M	0.32
SD	0.702
ID	0.629
α - zadatak	0.904



30.b Odredite debljinu kovanice od 50 lipa.

M	0.32
SD	0.630
ID	0.642
α - zadatak	0.903



- Većina zadataka u kategoriji vrlo teških i teških
- FA: 1 faktor; 29,7 % varijance