

Na bazi premera dela sastojine crnog bora u Lipovici, površine $p = 0.1$ ha i poznate starosti od 55 godina, odrediti i analizirati sledeće elemente rasta i sastojinske izgrađenosti i po potrebi ih grafički predstaviti:

1. Srednje prečnike i visine; 2. Temeljnice i zapremine;

2.1. Temeljnice pojedinačnih stabla, dobijene izrazom $g = \frac{d^2 \cdot \pi}{40000}$, upisivati u tabelu koja je u sklopu ovog zadatka.

2.2. Na osnovu stepene funkcije, $h = 7.6849431 \cdot d^{0.2921028}$, pomoću koja smo izravnavali vezu prečnika i visine nacrtati visinsku krivu na grafikonu iz prethodnog zadatka. Takođe, na osnovu dobijene visinske krive, odrediti i upisati visine na mestima gde nedostaju u tabeli premera iz prethodnog zadatka.

—	d [cm]	+	v [m ³]
9.5	10	10.49	$0.003321 + 0.0019551 \cdot h + 0.000212 \cdot h^2 - 0.000008449883 \cdot h^3$
10.5	11	11.49	$0.019433 - 0.00197 \cdot h + 0.000608 \cdot h^2 - 0.000018 \cdot h^3$
11.5	12	12.49	$-0.032979 + 0.013841 \cdot h - 0.000671 \cdot h^2 + 0.000015 \cdot h^3$
12.5	13	13.49	$-0.018609 + 0.012202 \cdot h - 0.000566 \cdot h^2 + 0.000015 \cdot h^3$
13.5	14	14.49	$-0.044235 + 0.019489 \cdot h - 0.001044 \cdot h^2 + 0.000026 \cdot h^3$
14.5	15	15.49	$-0.019722 + 0.014333 \cdot h - 0.000514 \cdot h^2 + 0.000012 \cdot h^3$
15.5	16	16.49	$-0.007571 + 0.012104 \cdot h - 0.000137 \cdot h^2$
16.5	17	17.49	$0.01 + 0.01 \cdot h$
17.5	18	18.49	$0.223156 - 0.059532 \cdot h + 0.008337 \cdot h^2 - 0.000414 \cdot h^3 + 0.000007327232 \cdot h^4$
18.5	19	19.49	$0.013912 + 0.012462 \cdot h$
19.5	20	20.49	$0.017538 + 0.01378 \cdot h$
20.5	21	21.49	$-0.044633 + 0.031277 \cdot h - 0.001271 \cdot h^2 + 0.000032 \cdot h^3$
21.5	22	22.49	$0.023077 + 0.016703 \cdot h$
22.5	23	23.49	$0.026154 + 0.018297 \cdot h$
23.5	24	24.49	$0.03 + 0.02 \cdot h$
24.5	25	25.49	$0.0338462 + 0.0213187 \cdot h$
25.5	26	26.49	$0.042582 + 0.022802 \cdot h$
26.5	27	27.49	$-0.110769 + 0.057962 \cdot h - 0.002315 \cdot h^2 + 0.000052 \cdot h^3$
27.5	28	28.49	$-0.010869 + 0.038017 \cdot h - 0.000767 \cdot h^2 + 0.000017 \cdot h^3$
28.5	29	29.49	$0.232198 - 0.012326 \cdot h + 0.002885 \cdot h^2 - 0.000064 \cdot h^3$
29.5	30	30.49	$0.156749 + 0.00896 \cdot h + 0.001426 \cdot h^2 - 0.000029 \cdot h^3$
30.5	31	31.49	$0.088979 + 0.024003 \cdot h + 0.000711 \cdot h^2 - 0.000018 \cdot h^3$
31.5	32	32.49	$0.025502 + 0.036402 \cdot h + 0.000158 \cdot h^2 - 0.000007331993 \cdot h^3$
32.5	33	33.49	$-0.046558 + 0.051162 \cdot h - 0.000499 \cdot h^2 + 0.000003351768 \cdot h^3$
33.5	34	34.49	$-0.149239 + 0.07371 \cdot h - 0.001758 \cdot h^2 + 0.000029 \cdot h^3$
34.5	35	35.49	$-0.148236 + 0.077322 \cdot h - 0.001863 \cdot h^2 + 0.000031 \cdot h^3$
35.5	36	36.49	$-0.084291 + 0.07077 \cdot h - 0.001462 \cdot h^2 + 0.000025 \cdot h^3$
36.5	37	37.49	$-0.124446 + 0.081256 \cdot h - 0.001933 \cdot h^2 + 0.000034 \cdot h^3$
37.5	38	38.49	$-0.232142 + 0.103519 \cdot h - 0.003053 \cdot h^2 + 0.000055 \cdot h^3$
38.5	39	39.49	$-0.029622 + 0.074514 \cdot h - 0.001407 \cdot h^2 + 0.000026 \cdot h^3$

Za određivanje zapremine po jednosantimetarskim debljinskim stepenima, prvo treba locirati kojem stepenu pripada stablo za koje sve vrši izračunavanje, a zatim u pripadajuću regresionu jednačinu zameniti nezavisnu promenljivu iznosom visine (h) u metrima.

2.3. Trenutni broj stabala iznosi $N/ha = n \cdot \frac{1ha}{p} =$

2.4. Trenutna temeljnica sastojine iznosi $G = \sum_1^n g \cdot \frac{1ha}{p} =$

2.5. Trenutna zapremina sastojine iznosi $V = \sum_1^n v \cdot \frac{1ha}{p} =$

n	g	v	$\frac{h}{d}$	r_s	b	l	$\frac{l}{h}$	$\frac{b}{h}$	$\frac{b}{l}$	$\frac{b}{d}$	Zp	N	G	V	n	g	v	$\frac{h}{d}$	r_s	b	l	$\frac{l}{h}$	$\frac{b}{h}$	$\frac{b}{l}$	$\frac{b}{d}$	Zp	N	G	V
1	.	.													45	0.03	.												
2	0.05	0.5													46	.	.		2	4			0.2		.	12.6	.	.	.
3	0.04	0.38		1.8	3.6			0.2		15.7	.	.	33.3	316.5	47	.	0.41	70	1.9	3.8	.	.	0.2	.	.	11.3	752	.	.
4	0.03	0.21													48	0.07	0.63	63	.	.	5.3	.	.	.	14.9	.	559	39.1	352.2
5	.	0.59		2.1	.			0.2		15.2	.	612	36.7	361.1	49	0.04	0.33	81			.	.							
6	0.08	0.86	.	2.5	5			.		15.5	.	.	34.7	373.2	50	/													
7	0.07	0.57	62												51	0.04	0.38												
8	.	0.34													52	0.03	.												
9	0.03	0.24													53	0.03	0.24												
10	0.03	0.24													54	0.02	0.21												
11	0.04	0.34													55	0.04	0.38												
12	0.04	0.34													56	/													
13	0.04	0.34													57	0.05	0.49												
14	0.06	0.59													58	0.07	0.69	67	2.6	.	6.3	.	0.3	.	17	21.2	401	.	.
15	0.07	.	62	.	4.8	4.4	0.2	0.3	.	15.9	18.1	470	32.9	.	59	.	0.5		2.1	4.2			0.2		16.2	13.9	.	.	.
16	0.03	0.27													60	0.07	0.77	72	2.3	.	.	0.3	0.2	.	15	.	512	.	394.2
17	.	.	70	.	4.6			.		.	16.6	512	35.8	.	61	0.05	0.48	84	.	.	7.9	.	0.2	0.5	.	11.3	752	.	361
18	0.06	0.51	69	1.9	.	4.4	0.2	.	.	14	11.3	.	45.1	.	62	0.04	0.34		1.7	3.4			0.2		15.8	.	934	37.4	317.6
19	0.02	0.19	107			3.4	0.2								63	0.07	0.68	.	.	4.2	.	.	.	.	.	13.9	612	42.8	416.2
20	0.05	0.45		1.9	3.8			0.2		15.4	11.3	.	37.6	338.4	64	0.03	0.21												
21	0.04	0.38													65	0.05	0.53	82			.	.							
22	0.04	0.34													66	0.07	0.8	.	.	.	8.2	0.4	.	.	14.9	.	512	35.8	409.6
23	0.06	0.58		.	4			0.2		.	12.6	675	40.5	391.5	67	0.06	0.54	75	2.3	4.6	7.1	.	.	.	17.1	16.6	.	.	276.5
24	0.02	0.16													68	0.05	.	81			.	0.3							
25	0.03	0.27													69	0.07	.	68			.	0.3							
26	0.01	0.09													70	0.04	0.36	.			5.9	0.3							
27	0.03	0.27													71	0.03	0.29	87			5	0.3							
28	0.09	0.9	69	2.6	.			.		15.6	21.2	401	36.1	360.9	72	0.05	0.42	.	2	4	6.2	0.3	.	.	16.4	12.6	.	.	283.5
29	0.04	0.34													73	/													
30	0.11	1.17	65												74	0.04	0.4	.			6.4	0.3							
31	0.05	0.49	.			7.3	0.3								75	0.06	0.51	63											
32	0.05	0.47	90			.	0.3								76	0.1	1.09	66											
33	0.07	0.71	70			.	.								77	0.06	0.54												
34	0.01	.	.			2.8	0.2								78	/													
35	0.04	0.34													79	0.06	0.54												
36	0.05	0.42													80	0.02	0.19												
37	0.06	0.59													81	0.08	0.84	.	.	5.8			0.3		18.4	26.4	322	25.8	270.5
38	/														82	0.05	0.42												
39	0.03	0.21	85			3.6	.								83	0.04	0.38												
40	0.06	0.54		2.2	4.4			0.2		16.1	15.2	559	.	.	84	0.04	0.38												
41	.	0.45		2.1	.			0.2		.	13.9	612	30.6	.	85	0.07	0.59	.	.	4.8			0.3		16.6	18.1	470	32.9	277.3
42	.	0.5		2.3	4.6			0.2		.	.	512	25.6	.	86	0.03	.	94			.	0.3							
43	0.06	0.52	63	.	.			.		18.4	.	.	24.1	208.5	87	0.04	0.42		1.7	3.4			0.2		.	9.1	934	37.4	392.3
44	.	0.42		2.1	4.2			0.2		.	.	.	.	257															