

Path analysis:

[https://en.wikipedia.org/wiki/Path\\_analysis\\_\(statistics\)](https://en.wikipedia.org/wiki/Path_analysis_(statistics))

Knihy

<https://www.amazon.com/Latent-Variable-Models-John-Loehlin/dp/113891607>

<https://books.google.cz/books?id=q9zhGIIYw7kC>

<https://onlinelibrary.wiley.com/doi/book/10.1002/9781118619179>

<https://www.enbook.cz/catalog/product/view/id/399613?gclid=EAIaIQobChMI9>

Plán práce:

korelace

jednoduchá regrese (2 proměnné)

vícenásobná regrese (3 proměnné)

parciální korelace

faktorová analýza (1 faktor)

faktorová analýza (2 a více faktorů)

v Excelu

v dalších softwarech

explorační vs. konfirmační FA

strukturní modelování

2

[}N2Mv4yR9gIVVOJ3Ch1PeA5KEAQYASABEgJojvD\\_BwE](#)

i	pohl (P)	vyska (V)	hmot (H)	mV - Vi	mH - Hi	zVi	zHi	zVi * zHi
1	0	172	87	-1.33333	11.66667	-0.11572	0.604136	-0.06991
2	1	169	61	-4.33333	-14.3333	-0.3761	-0.74222	0.279148
3	0	170	63	-3.33333	-12.3333	-0.2893	-0.63866	0.184767
4	1	166	85	-7.33333	9.666667	-0.63647	0.50057	-0.3186
5	0	183	77	9.666667	1.666667	0.838984	0.086305	0.072409
6	0	168	58	-5.33333	-17.3333	-0.46289	-0.89757	0.415475
7	1	170	65	-3.33333	-10.3333	-0.2893	-0.53509	0.154805
8	0	190	90	16.66667	14.66667	1.446524	0.759485	1.098613
9	1	165	63	-8.33333	-12.3333	-0.72326	-0.63866	0.461917
10	1	152	51	-21.3333	-24.3333	-1.85155	-1.26005	2.333055
11	0	187	82	13.66667	6.666667	1.186149	0.34522	0.409483
12	0	185	125	11.66667	49.66667	1.012567	2.571892	2.604212
13	0	193	97	19.66667	21.66667	1.706898	1.121966	1.915082
14	0	163	61	-10.3333	-14.3333	-0.89684	-0.74222	0.66566
15	1	150	44	-23.3333	-31.3333	-2.02513	-1.62254	3.285852
16	1	173	68	-0.33333	-7.33333	-0.02893	-0.37974	0.010986
17	1	165	58	-8.33333	-17.3333	-0.72326	-0.89757	0.64918
18	1	171	65	-2.33333	-10.3333	-0.20251	-0.53509	0.108363
19	0	185	90	11.66667	14.66667	1.012567	0.759485	0.769029
20	0	172	72	-1.33333	-3.33333	-0.11572	-0.17261	0.019975
21	1	168	63	-5.33333	-12.3333	-0.46289	-0.63866	0.295627
22	0	194	113	20.66667	37.66667	1.793689	1.950496	3.498583
23	1	174	83	0.666667	7.666667	0.057861	0.397004	0.022971
24	0	175	87	1.666667	11.66667	0.144652	0.604136	0.08739

m 173.3333 75.33333 -9.5E-15 4.74E-15  
sd 11.52188 19.31133

průměr 173.3333 75.33333  
smoch 11.52188 19.31133

rVH

rVH

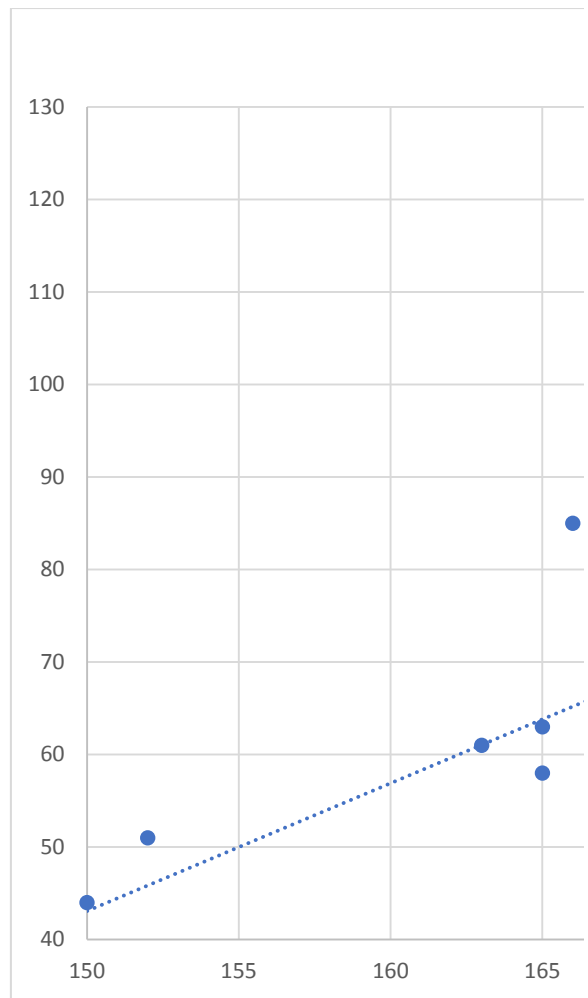
rPV

rPH

statistická \

$$t = \frac{r\sqrt{n}}{\sqrt{1-r^2}}$$

H.stř	e
73.49170306	13.50829694
69.34803493	-8.348034934
70.72925764	-7.729257642
65.20436681	19.79563319
88.68515284	-11.68515284
67.96681223	-9.966812227
70.72925764	-5.729257642
98.35371179	-8.35371179
63.8231441	-0.823144105
45.86724891	5.132751092
94.21004367	-12.21004367
91.44759825	33.55240175
102.4973799	-5.497379913
61.06069869	-0.06069869
43.10480349	0.895196507
74.87292576	-6.872925764
63.8231441	-5.823144105
72.11048035	-7.110480349
91.44759825	-1.447598253
73.49170306	-1.491703057
67.96681223	-4.966812227
103.8786026	9.12139738
76.25414847	6.745851528
77.63537118	9.364628821

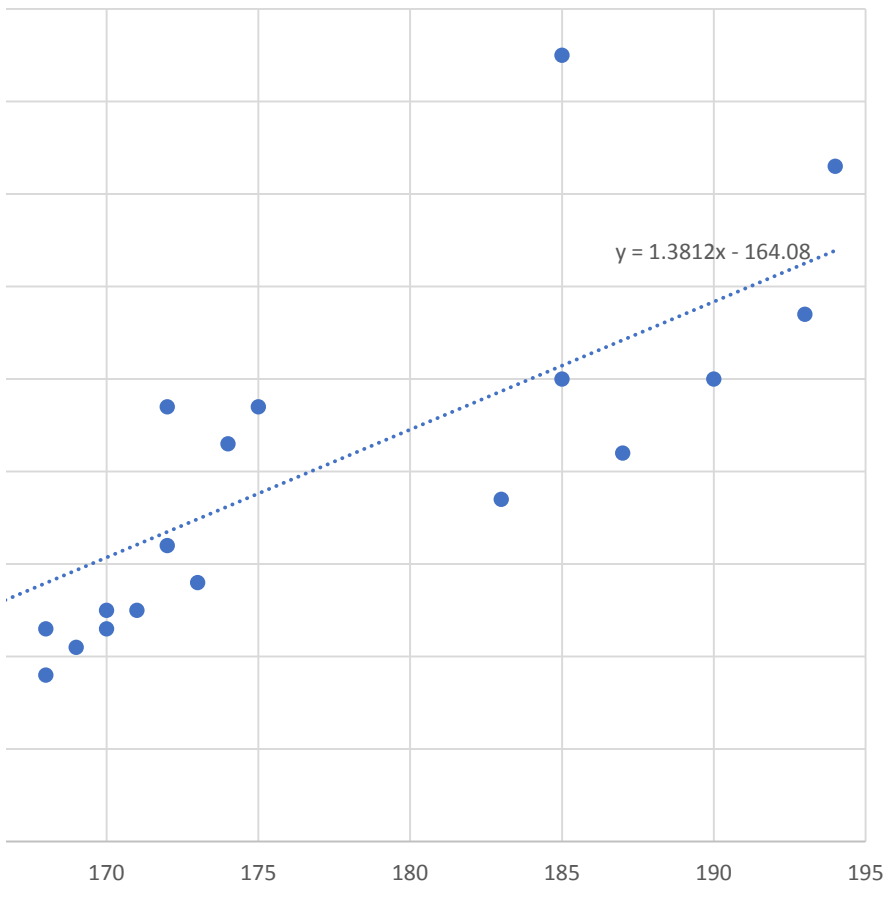


koeficient determinace		Matematický model	
0.824090059		H.stříška.i = a + b * V.i	
0.824090059	0.679124425	a	-164.079
-0.62030168	0.384774178	b	1.381223
-0.54261029	0.294425922		

významnost korelace

$\bar{-2}$	t	6.823665
$\bar{-r^2}$	df	22
	p	8.3E-07

hmot (H)



i	pohl (P)	vyska (V)	hmot (H)	mV - Vi	mH - Hi	zVi	zHi	zVi * zHi
1	0	172	87	-1.33333	11.66667	-0.11572	0.604136	-0.06991
2	1	169	61	-4.33333	-14.3333	-0.3761	-0.74222	0.279148
3	0	170	63	-3.33333	-12.3333	-0.2893	-0.63866	0.184767
4	1	166	85	-7.33333	9.66667	-0.63647	0.50057	-0.3186
5	0	183	77	9.66667	1.66667	0.838984	0.086305	0.072409
6	0	168	58	-5.33333	-17.3333	-0.46289	-0.89757	0.415475
7	1	170	65	-3.33333	-10.3333	-0.2893	-0.53509	0.154805
8	0	190	90	16.6667	14.6667	1.446524	0.759485	1.098613
9	1	165	63	-8.33333	-12.3333	-0.72326	-0.63866	0.461917
10	1	152	51	-21.3333	-24.3333	-1.85155	-1.26005	2.333055
11	0	187	82	13.6667	6.66667	1.186149	0.34522	0.409483
12	0	185	125	11.6667	49.6667	1.012567	2.571892	2.604212
13	0	193	97	19.6667	21.6667	1.706898	1.121966	1.915082
14	0	163	61	-10.3333	-14.3333	-0.89684	-0.74222	0.66566
15	1	150	44	-23.3333	-31.3333	-2.02513	-1.62254	3.285852
16	1	173	68	-0.33333	-7.33333	-0.02893	-0.37974	0.010986
17	1	165	58	-8.33333	-17.3333	-0.72326	-0.89757	0.64918
18	1	171	65	-2.33333	-10.3333	-0.20251	-0.53509	0.108363
19	0	185	90	11.6667	14.6667	1.012567	0.759485	0.769029
20	0	172	72	-1.33333	-3.33333	-0.11572	-0.17261	0.019975
21	1	168	63	-5.33333	-12.3333	-0.46289	-0.63866	0.295627
22	0	194	113	20.6667	37.6667	1.793689	1.950496	3.498583
23	1	174	83	0.66667	7.66667	0.057861	0.397004	0.022971
24	0	175	87	1.66667	11.6667	0.144652	0.604136	0.08739

m 173.3333 75.33333 -9.5E-15 4.74E-15  
sd 11.52188 19.31133

průměr 173.3333 75.33333  
smoch 11.52188 19.31133

rVH

rVH

rPV

rPH

statistická v

$$t = \frac{r\sqrt{n}}{\sqrt{1-r^2}}$$

**Parciální korelace**

rVH.P

rPV.H

rPH.V

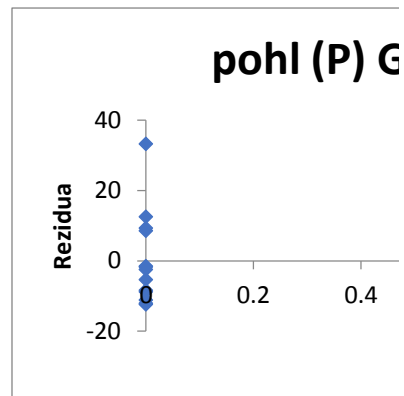






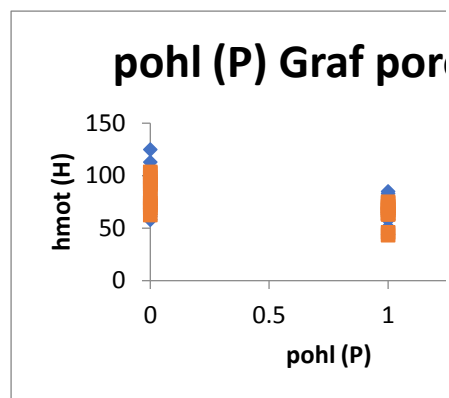
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

0.68073



<i>statistika</i>
0.825063
0.68073
0.650323
11.41947
24

Rozdíl	SS	MS	F	významnost F
2	5838.845	2919.423	22.38749	6.22E-06
21	2738.488	130.4042		
23	8577.333			



Koeficienty	ba	stř. hodr.	t Stat	Hodnota P	Dolní 95%	Horní 95%	Dolní 95,0%	Horní 95,0%
-153.985	47.47069	-3.2438	0.003887	-252.706	-55.2646	-252.706	-55.2646	
-1.93805	5.964391	-0.32494	0.748443	-14.3417	10.46558	-14.3417	10.46558	
1.328117	0.263476	5.040746	5.44E-05	0.780188	1.876045	0.780188	1.876045	

hmot (H)

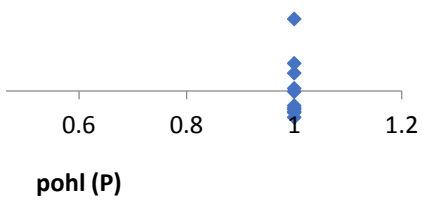
PRAVDĚPODOBNOST

řávané hmo	Residua	novaná rezidua	Percentil	hmot (H)
74.45079	12.54921	1.150072	2.083333	44
68.52838	-7.52838	-0.68994	6.25	51
71.79455	-8.79455	-0.80598	10.41667	58
64.54403	20.45597	1.874686	14.58333	58
89.06007	-12.0601	-1.10524	18.75	61
69.13832	-11.1383	-1.02077	22.91667	61
69.8565	-4.8565	-0.44507	27.08333	63
98.35689	-8.35689	-0.76587	31.25	63
63.21592	-0.21592	-0.01979	35.41667	63
45.9504	5.049601	0.46277	39.58333	65

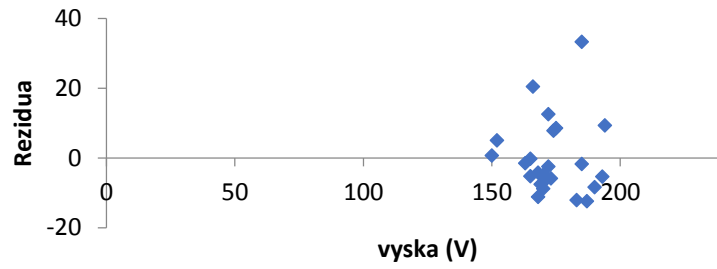
94.37254	-12.3725	-1.13388	43.75	65
91.7163	33.2837	3.050282	47.91667	68
102.3412	-5.34124	-0.4895	52.08333	72
62.49774	-1.49774	-0.13726	56.25	77
43.29417	0.705834	0.064686	60.41667	82
73.84085	-5.84085	-0.53528	64.58333	83
63.21592	-5.21592	-0.47801	68.75	85
71.18461	-6.18461	-0.56679	72.91667	87
91.7163	-1.7163	-0.15729	77.08333	87
74.45079	-2.45079	-0.2246	81.25	90
67.20027	-4.20027	-0.38493	85.41667	90
103.6694	9.330648	0.855107	89.58333	97
75.16896	7.831035	0.717675	93.75	113
78.43514	8.564864	0.784926	97.91667	125

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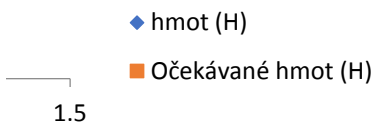
### Graf s rezidui



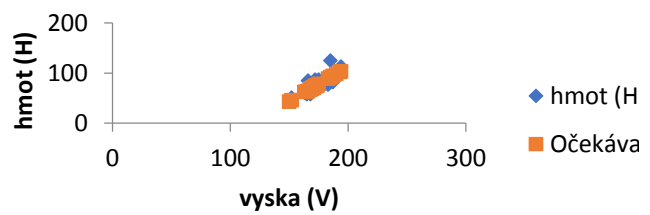
### vyska (V) Graf s rezidui



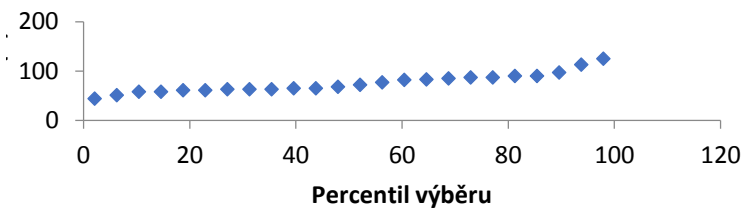
### Porovnání hodnot



### vyska (V) Graf porovnání hodnot



### Graf s rozdělením pravděpodobnosti







l)  
ané hmot (H)

i	pohl (P)	vyska (V)	hmot (H)	mV - Vi	mH - Hi	zVi	zHi	zPi
1	0	172	87	-1.33333	11.66667	-0.11572	0.604136	0.900498
2	1	169	61	-4.33333	-14.3333	-0.3761	-0.74222	-1.06423
3	0	170	63	-3.33333	-12.3333	-0.2893	-0.63866	0.900498
4	1	166	85	-7.33333	9.66667	-0.63647	0.50057	-1.06423
5	0	183	77	9.66667	1.66667	0.838984	0.086305	0.900498
6	0	168	58	-5.33333	-17.3333	-0.46289	-0.89757	0.900498
7	1	170	65	-3.33333	-10.3333	-0.2893	-0.53509	-1.06423
8	0	190	90	16.66667	14.66667	1.446524	0.759485	0.900498
9	1	165	63	-8.33333	-12.3333	-0.72326	-0.63866	-1.06423
10	1	152	51	-21.3333	-24.3333	-1.85155	-1.26005	-1.06423
11	0	187	82	13.66667	6.66667	1.186149	0.34522	0.900498
12	0	185	125	11.66667	49.66667	1.012567	2.571892	0.900498
13	0	193	97	19.66667	21.66667	1.706898	1.121966	0.900498
14	0	163	61	-10.3333	-14.3333	-0.89684	-0.74222	0.900498
15	1	150	44	-23.3333	-31.3333	-2.02513	-1.62254	-1.06423
16	1	173	68	-0.33333	-7.33333	-0.02893	-0.37974	-1.06423
17	1	165	58	-8.33333	-17.3333	-0.72326	-0.89757	-1.06423
18	1	171	65	-2.33333	-10.3333	-0.20251	-0.53509	-1.06423
19	0	185	90	11.66667	14.66667	1.012567	0.759485	0.900498
20	0	172	72	-1.33333	-3.33333	-0.11572	-0.17261	0.900498
21	1	168	63	-5.33333	-12.3333	-0.46289	-0.63866	-1.06423
22	0	194	113	20.66667	37.66667	1.793689	1.950496	0.900498
23	1	174	83	0.666667	7.66667	0.057861	0.397004	-1.06423
24	0	175	87	1.66667	11.66667	0.144652	0.604136	0.900498
m	0.458333	173.3333	75.33333	-9.5E-15	4.74E-15	-8.2E-16	2.04E-16	0
sd	0.508977	11.52188	19.31133			1	1	1
průměr smodch		173.3333	75.33333					
		11.52188	19.31133					

rVH

rVH

rPV

rPH

statistická \

$$t = \frac{r\sqrt{n}}{\sqrt{1-r^2}}$$

**Parciální korelace**

rVH.P

rPV.H

rPH.V

H.stř	e.H	P.stř	e.P	
73.49170306	13.50829694	0.494869	-0.49487	
69.34803493	-8.348034934	0.577074	0.422926	
70.72925764	-7.729257642	0.549672	-0.54967	
65.20436681	19.79563319	0.659279	0.340721	
88.68515284	-11.68515284	0.19345	-0.19345	
67.96681223	-9.966812227	0.604476	-0.60448	
70.72925764	-5.729257642	0.549672	0.450328	
98.35371179	-8.35371179	0.001638	-0.00164	
63.8231441	-0.823144105	0.686681	0.313319	
45.86724891	5.132751092	1.042904	-0.0429	
94.21004367	-12.21004367	0.083843	-0.08384	Předpověď
91.44759825	33.55240175	0.138646	-0.13865	
102.4973799	-5.497379913	-0.08057	0.080568	b
61.06069869	-0.06069869	0.741485	-0.74148	a
43.10480349	0.895196507	1.097707	-0.09771	
74.87292576	-6.872925764	0.467467	0.532533	Předpověď
63.8231441	-5.823144105	0.686681	0.313319	
72.11048035	-7.110480349	0.522271	0.477729	b
91.44759825	-1.447598253	0.138646	-0.13865	a
73.49170306	-1.491703057	0.494869	-0.49487	
67.96681223	-4.966812227	0.604476	0.395524	
103.8786026	9.12139738	-0.10797	0.107969	
76.25414847	6.745851528	0.440066	0.559934	
77.63537118	9.364628821	0.412664	-0.41266	

koeficient determinace

0

0.824090059	0.679124425
-0.62030168	0.384774178
-0.54261029	0.294425922

významnost korelace

$\frac{-2}{\sqrt{r^2}}$	t	6.823665
	df	22
	p	8.3E-07

pomocí vzorce Excelu (pearson)

0.739934279	
-0.36388373	
-0.0707296	-0.07073



H z V

1.381222707  
-164.0786026

P z V

-0.027401747  
5.207969432

b1
b2
b3
...
bk

x

b1	b2	b3	...	bk
----	----	----	-----	----

1
2
3
4
5

x

10	20	30	40	50
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1	-1
2	-2
3	-3
4	-4
5	-5

10	20	30	40	50
1000	2000	3000	4000	5000

1	-1
2	-2
3	-3
4	-4
5	-5

1	2	3	4	5
-1	-2	-3	-4	-5

b1b1	b1b2	b1b3	...	b1bk
b2b1	b2b2	b2b3		b2bk
b3b1				

10	20	30	40	50
20	40	60	80	100
30	60	90	120	150
40	80	120	160	200
50	100	150	200	250

-990	-1980	-2970	-3960	-4950
-1980	-3960	-5940	-7920	-9900
-2970	-5940	-8910	-11880	-14850
-3960	-7920	-11880	-15840	-19800
-4950	-9900	-14850	-19800	-24750

2	4	6	8	10
4	8	12	16	20
6	12	18	24	30
8	16	24	32	40
10	20	30	40	50

	<i>X</i>	<i>Y</i>	<i>Z</i>	<i>oXY</i>	<i>oXZ</i>	<i>oYZ</i>	<i>sXY</i>	<i>sXZ</i>
<i>X</i>	1							
<i>Y</i>	-0.02139	1						
<i>Z</i>	0.008204	0.10395	1					
<i>oXY</i>	0.612812	0.776943	0.087329	1				
<i>oXZ</i>	0.533446	0.076667	0.850182	0.396518	1			
<i>oYZ</i>	-0.00639	0.664853	0.812039	0.521484	0.683511	1		
<i>sXY</i>	0.68543	0.674834	0.09277	0.965021	0.439354	0.465655	1	
<i>sXZ</i>	0.709488	0.069972	0.670419	0.502082	0.940632	0.544572	0.564359	1
<i>XYZ</i>	0.005191	0.725392	0.729466	0.576626	0.619761	0.973507	0.523814	0.497851
<i>uXY</i>	0.514931	0.837859	0.080486	0.986512	0.339195	0.552089	0.91649	0.426878
<i>uXZ</i>	0.361227	0.07926	0.929568	0.290118	0.976475	0.744654	0.320944	0.851439
<i>uYZ</i>	-0.01028	0.588626	0.857485	0.458785	0.719904	0.989404	0.406153	0.573862
<i>vXYZ</i>	0.514343	0.591023	0.582405	0.79104	0.76344	0.784213	0.828867	0.804001
<i>uXYZ</i>	0.288692	0.55358	0.823728	0.619348	0.848758	0.943486	0.584905	0.748247

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<i>xYZ</i>	<i>uXY</i>	<i>uXZ</i>	<i>uYZ</i>	<i>vXYZ</i>	<i>uXYZ</i>
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	1				
0.60844		1			
0.674547	0.250668		1		
0.935152	0.488337	0.785733		1	
0.818281	0.749744	0.702794	0.748841		1
0.898933	0.622616	0.86724	0.951494	0.858283	

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i	gX	gY	gZ	X	Y	Z	oXY	oXZ	
1	7	12	16	11	7	21	36	64	
2	5	11	20	5	13	7	36	24	
3	5	17	20	8	13	21	42	58	
4	9	6	19	7	9	18	32	50	
5	8	13	8	6	9	14	30	40	
6	5	15	17	11	12	15	46	52	
7	11	13	18	11	10	10	42	42	
8	11	6	21	5	13	8	36	26	
9	9	15	18	8	9	19	34	54	
10	11	10	13	10	17	18	54	56	
11	10	16	9	9	10	18	38	54	
12	4	17	13	6	17	8	46	28	
13	10	17	12	7	8	18	30	50	
14	3	16	14	11	6	20	34	62	
15	4	11	12	6	16	13	44	38	
16	7	16	14	12	6	20	36	64	
17	13	17	21	13	6	13	38	52	
18	4	12	11	9	15	16	48	50	
19	7	6	7	6	9	20	30	52	
20	9	11	17	6	5	22	22	56	
21	8	9	17	4	11	22	30	52	
22	10	15	21	10	14	16	48	52	
23	3	14	17	13	11	8	48	42	
24	13	8	12	12	8	9	40	42	
25	7	8	12	10	16	22	52	64	
26	8	15	22	9	6	15	30	48	
27	8	8	11	5	11	21	32	52	
28	6	13	13	7	12	15	38	44	
29	12	13	17	12	7	15	38	54	
30	4	15	17	6	15	10	42	32	
31	10	5	21	10	11	22	42	64	
32	9	13	22	4	10	13	28	34	
33	10	9	15	11	11	12	44	46	
34	5	16	8	8	14	7	44	30	
35	5	14	21	11	15	22	52	66	
36	4	6	19	8	9	19	34	54	
37	6	13	8	11	17	20	56	62	
38	9	15	8	9	7	16	32	50	
39	9	14	20	10	17	18	54	56	
40	12	10	8	10	10	19	40	58	
41	7	11	13	3	10	18	26	42	
42	7	7	8	9	12	8	42	34	
43	4	6	17	4	7	15	22	38	
44	10	7	8	6	14	16	40	44	
45	11	10	13	10	5	17	30	54	
46	4	15	8	12	16	22	56	68	
47	5	9	14	6	6	9	24	30	
48	3	16	20	6	16	21	44	54	
49	4	13	11	6	16	9	44	30	

50	7	15	14	8	10	14	36	44
51	11	14	7	6	13	21	38	54
52	9	8	19	12	6	16	36	56
53	10	7	16	4	12	15	32	38
54	10	7	13	11	12	13	46	48
55	12	6	12	10	11	15	42	50
56	10	17	11	13	7	16	40	58
57	9	7	13	6	9	17	30	46
58	13	7	14	7	13	22	40	58
59	12	15	13	9	17	20	52	58
60	9	12	21	6	14	7	40	26
61	8	5	14	12	13	13	50	50
62	13	13	8	10	12	19	44	58
63	13	9	10	11	10	16	42	54
64	4	13	17	12	14	14	52	52
65	6	8	8	3	8	9	22	24
66	9	13	9	6	17	13	46	38
67	13	15	17	5	16	9	42	28
68	8	11	18	4	16	21	40	50
69	5	9	8	12	9	9	42	42
70	5	15	17	11	9	11	40	44
71	6	14	7	11	13	14	48	50
72	10	13	12	4	6	15	20	38
73	5	7	8	13	13	8	52	42
74	10	10	8	10	17	18	54	56
75	10	13	9	13	16	16	58	58
76	6	9	19	3	5	8	16	22
77	13	16	16	7	12	8	38	30
78	9	7	20	12	10	17	44	58
79	4	12	17	10	10	13	40	46
80	6	10	13	7	14	21	42	56
81	13	6	20	7	16	18	46	50
82	6	6	20	7	14	13	42	40
83	7	6	17	11	15	20	52	62
84	9	16	8	5	16	19	42	48
85	3	12	14	9	9	18	36	54
86	11	10	13	5	13	19	36	48
87	3	10	16	6	11	17	34	46
88	12	10	15	13	17	9	60	44
89	7	7	8	9	6	8	30	34
90	6	13	20	6	9	13	30	38
91	6	15	16	4	8	12	24	32
92	8	11	21	7	16	13	46	40
93	6	16	18	5	12	15	34	40
94	12	12	13	13	9	7	44	40
95	9	10	7	12	14	21	52	66
96	7	6	21	8	7	10	30	36
97	12	8	11	12	15	15	54	54
98	8	13	7	9	16	21	50	60
99	6	8	18	8	17	10	50	36

100

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36

40



oYZ	sXY	sXZ	xyZ	uXY	uXZ	uYZ	vXYZ	uXYZ
56	77	231	147	13.0384	23.70654	22.13594	1617	24.71841
40	65	35	91	13.92839	8.602325	14.76482	455	15.58846
68	104	168	273	15.26434	22.47221	24.69818	2184	25.96151
54	63	126	162	11.40175	19.31321	20.12461	1134	21.30728
46	54	84	126	10.81665	15.23155	16.64332	756	17.69181
54	132	165	180	16.27882	18.60108	19.20937	1980	22.13594
40	110	110	100	14.86607	14.86607	14.14214	1100	17.91647
42	65	40	104	13.92839	9.433981	15.26434	520	16.06238
56	72	152	171	12.04159	20.61553	21.0238	1368	22.49444
70	170	180	306	19.72308	20.59126	24.75884	3060	26.70206
56	90	162	180	13.45362	20.12461	20.59126	1620	22.47221
50	102	48	136	18.02776	10	18.78829	816	19.72308
52	56	126	144	10.63015	19.31321	19.69772	1008	20.90454
52	66	220	120	12.52996	22.82542	20.88061	1320	23.60085
58	96	78	208	17.08801	14.31782	20.61553	1248	21.47091
52	72	240	120	13.41641	23.32381	20.88061	1440	24.08319
38	78	169	78	14.31782	18.38478	14.31782	1014	19.33908
62	135	144	240	17.49286	18.35756	21.93171	2160	23.70654
58	54	120	180	10.81665	20.88061	21.93171	1080	22.73763
54	30	132	110	7.81025	22.80351	22.56103	660	23.34524
66	44	88	242	11.7047	22.36068	24.59675	968	24.91987
60	140	160	224	17.20465	18.86796	21.26029	2240	23.49468
38	143	104	88	17.02939	15.26434	13.60147	1144	18.81489
34	96	108	72	14.42221	15	12.04159	864	17
76	160	220	352	18.86796	24.16609	27.20294	3520	28.98275
42	54	135	90	10.81665	17.49286	16.15549	810	18.49324
64	55	105	231	12.08305	21.58703	23.70654	1155	24.22808
54	84	105	180	13.89244	16.55295	19.20937	1260	20.44505
44	84	180	105	13.89244	19.20937	16.55295	1260	20.44505
50	90	60	150	16.15549	11.6619	18.02776	900	19
66	110	220	242	14.86607	24.16609	24.59675	2420	26.55184
46	40	52	130	10.77033	13.60147	16.40122	520	16.88194
46	121	132	132	15.55635	16.27882	16.27882	1452	19.64688
42	112	56	98	16.12452	10.63015	15.65248	784	17.5784
74	165	242	330	18.60108	24.59675	26.62705	3630	28.80972
56	72	152	171	12.04159	20.61553	21.0238	1368	22.49444
74	187	220	340	20.24846	22.82542	26.24881	3740	28.4605
46	63	144	112	11.40175	18.35756	17.46425	1008	19.64688
70	170	180	306	19.72308	20.59126	24.75884	3060	26.70206
58	100	190	190	14.14214	21.47091	21.47091	1900	23.68544
56	30	54	180	10.44031	18.24829	20.59126	540	20.80865
40	108	72	96	15	12.04159	14.42221	864	17
44	28	60	105	8.062258	15.52417	16.55295	420	17.02939
60	84	96	224	15.23155	17.08801	21.26029	1344	22.09072
44	50	170	85	11.18034	19.72308	17.72005	850	20.34699
76	192	264	352	20	25.05993	27.20294	4224	29.73214
30	36	54	54	8.485281	10.81665	10.81665	324	12.36932
74	96	126	336	17.08801	21.84033	26.40076	2016	27.07397
50	96	54	144	17.08801	10.81665	18.35756	864	19.31321

48	80	112	140	12.80625	16.12452	17.20465	1120	18.97367
68	78	126	273	14.31782	21.84033	24.69818	1638	25.41653
44	72	192	96	13.41641	20	17.08801	1152	20.88061
54	48	60	180	12.64911	15.52417	19.20937	720	19.62142
50	132	143	156	16.27882	17.02939	17.69181	1716	20.83267
52	110	150	165	14.86607	18.02776	18.60108	1650	21.11871
46	91	208	112	14.76482	20.61553	17.46425	1456	21.77154
52	54	102	153	10.81665	18.02776	19.23538	918	20.14944
70	91	154	286	14.76482	23.08679	25.55386	2002	26.49528
74	153	180	340	19.23538	21.93171	26.24881	3060	27.74887
42	84	42	98	15.23155	9.219544	15.65248	588	16.76305
52	156	156	169	17.69181	17.69181	18.38478	2028	21.9545
62	120	190	228	15.6205	21.47091	22.47221	2280	24.59675
52	110	176	160	14.86607	19.41649	18.86796	1760	21.84033
56	168	168	196	18.43909	18.43909	19.79899	2352	23.15167
34	24	27	72	8.544004	9.486833	12.04159	216	12.40967
60	102	78	221	18.02776	14.31782	21.40093	1326	22.22611
50	80	45	144	16.76305	10.29563	18.35756	720	19.0263
74	64	84	336	16.49242	21.37756	26.40076	1344	26.70206
36	108	108	81	15	15	12.72792	972	17.49286
40	99	121	99	14.21267	15.55635	14.21267	1089	17.9722
54	143	154	182	17.02939	17.80449	19.10497	2002	22.04541
42	24	60	90	7.211103	15.52417	16.15549	360	16.64332
42	169	104	104	18.38478	15.26434	15.26434	1352	20.04994
70	170	180	306	19.72308	20.59126	24.75884	3060	26.70206
64	208	208	256	20.61553	20.61553	22.62742	3328	26.09598
26	15	24	40	5.830952	8.544004	9.433981	120	9.899495
40	84	56	96	13.89244	10.63015	14.42221	672	16.03122
54	120	204	170	15.6205	20.80865	19.72308	2040	23.08679
46	100	130	130	14.14214	16.40122	16.40122	1300	19.20937
70	98	147	294	15.65248	22.13594	25.23886	2058	26.1916
68	112	126	288	17.46425	19.31321	24.08319	2016	25.07987
54	98	91	182	15.65248	14.76482	19.10497	1274	20.34699
70	165	220	300	18.60108	22.82542	25	3300	27.313
70	80	95	304	16.76305	19.64688	24.83948	1520	25.33772
54	81	162	162	12.72792	20.12461	20.12461	1458	22.04541
64	65	95	247	13.92839	19.64688	23.02173	1235	23.55844
56	66	102	187	12.52996	18.02776	20.24846	1122	21.11871
52	221	117	153	21.40093	15.81139	19.23538	1989	23.21637
28	54	72	48	10.81665	12.04159	10	432	13.45362
44	54	78	117	10.81665	14.31782	15.81139	702	16.91153
40	32	48	96	8.944272	12.64911	14.42221	384	14.96663
58	112	91	208	17.46425	14.76482	20.61553	1456	21.77154
54	60	75	180	13	15.81139	19.20937	900	19.84943
32	117	91	63	15.81139	14.76482	11.40175	819	17.29162
70	168	252	294	18.43909	24.18677	25.23886	3528	27.94638
34	56	80	70	10.63015	12.80625	12.20656	560	14.59452
60	180	180	225	19.20937	19.20937	21.2132	2700	24.37212
74	144	189	336	18.35756	22.84732	26.40076	3024	27.89265
54	136	80	170	18.78829	12.80625	19.72308	1360	21.2838

28

72

96

48 13.41641 14.42221

10

576

15.6205

<b>R</b>	X	Y	Z	oXY	oXZ	oYZ	sXY	
X		1	-0.02139	0.008204	0.612812	0.533446	-0.00639	0.68543
Y	-0.02139		1	0.10395	0.776943	0.076667	0.664853	0.674834
Z	0.008204	0.10395		1	0.087329	0.850182	0.812039	0.09277
oXY	0.612812	0.776943	0.087329		1	0.396518	0.521484	0.965021
oXZ	0.533446	0.076667	0.850182	0.396518		1	0.683511	0.439354
oYZ	-0.00639	0.664853	0.812039	0.521484	0.683511		1	0.465655
sXY	0.68543	0.674834	0.09277	0.965021	0.439354	0.465655		1
sXZ	0.709488	0.069972	0.670419	0.502082	0.940632	0.544572	0.564359	
xYZ	0.005191	0.725392	0.729466	0.576626	0.619761	0.973507	0.523814	
uXY	0.514931	0.837859	0.080486	0.986512	0.339195	0.552089	0.91649	
uXZ	0.361227	0.07926	0.929568	0.290118	0.976475	0.744654	0.320944	
uYZ	-0.01028	0.588626	0.857485	0.458785	0.719904	0.989404	0.406153	
vXYZ	0.514343	0.591023	0.582405	0.79104	0.76344	0.784213	0.828867	
uXYZ	0.288692	0.55358	0.823728	0.619348	0.848758	0.943486	0.584905	

<b>B</b>	F1	F2	F3	<b>BT</b>	X	Y	
X	0	0.9907	0	F1		0	0.995864
Y	0.995864	0	0.041514	F2	0.9907		0
Z	0.06086	0.007588	0.997988	F3		0	0.041514
oXY	0.780351	0.617899	0.035622				
oXZ	0.044298	0.52844	0.845712				
oYZ	0.632452	0	0.774115	SS	0.030482		
sXY	0.682533	0.706137	0.044711				
sXZ	0.043476	0.725201	0.665008				
xYZ	0.704156	0.011665	0.689513				
uXY	0.841368	0.513996	0.027401				
uXZ	0.044206	0.353803	0.925729				
uYZ	0.549448	0	0.824735				
vXYZ	0.576961	0.546955	0.545256				
uXYZ	0.522404	0.283894	0.79289				

<b>R.strž</b>	X	Y	Z	oXY	oXZ	oYZ	sXY	
X	0.981486		0	0.007518	0.612152	0.523526	0	0.69957
Y		0	0.993469	0.102038	0.778602	0.079224	0.661973	0.681566
Z	0.007518	0.102038	0.999742	0.087731	0.850717	0.811048	0.811048	0.091518
oXY	0.612152	0.778602	0.087731	0.992015	0.391216	0.52111	0.970529	
oXZ	0.523526	0.079224	0.850717	0.391216	0.996441	0.682695	0.441199	
oYZ		0	0.661973	0.811048	0.52111	0.682695	0.999249	0.466281
sXY	0.69957	0.681566	0.091518	0.970529	0.441199	0.466281		0.96648
sXZ	0.718456	0.070903	0.671819	0.505716	0.947557	0.542289	0.571498	
xYZ	0.011557	0.729868	0.731069	0.581259	0.620487	0.979107	0.519676	
uXY	0.509215	0.839026	0.082452	0.975136	0.332061	0.553336	0.938438	
uXZ	0.350513	0.082454	0.929241	0.286087	0.971822	0.744579	0.321396	
uYZ		0	0.581414	0.856515	0.458141	0.721828	0.985939	0.411891
vXYZ	0.541868	0.597211	0.583424	0.807618	0.775722	0.786991	0.804399	
uXYZ	0.281254	0.55316	0.825243	0.611321	0.84372	0.944184	0.592478	

<b>R.rezid</b>	X	Y	Z	oXY	oXZ	oYZ	sXY
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X	0.018514	-0.02139	0.000687	0.00066	0.00992	-0.00639	-0.01414
Y	-0.02139	0.006531	0.001911	-0.00166	-0.00256	0.00288	-0.00673
Z	0.000687	0.001911	0.000258	-0.0004	-0.00053	0.000991	0.001252
oXY	0.00066	-0.00166	-0.0004	0.007985	0.005301	0.000374	-0.00551
oXZ	0.00992	-0.00256	-0.00053	0.005301	0.003559	0.000816	-0.00185
oYZ	-0.00639	0.00288	0.000991	0.000374	0.000816	0.000751	-0.00063
sXY	-0.01414	-0.00673	0.001252	-0.00551	-0.00185	-0.00063	0.03352
sXZ	-0.00897	-0.00093	-0.0014	-0.00363	-0.00692	0.002283	-0.00714
xYZ	-0.00637	-0.00448	-0.0016	-0.00463	-0.00073	-0.0056	0.004138
uXY	0.005715	-0.00117	-0.00197	0.011376	0.007134	-0.00125	-0.02195
uXZ	0.010714	-0.00319	0.000326	0.004031	0.004652	7.57E-05	-0.00045
uYZ	-0.01028	0.007212	0.00097	0.000644	-0.00192	0.003465	-0.00574
vXYZ	-0.02752	-0.00619	-0.00102	-0.01658	-0.01228	-0.00278	0.024468
uXYZ	0.007437	0.00042	-0.00152	0.008027	0.005038	-0.0007	-0.00757



sXZ	xYZ	uXY	uXZ	uYZ	vXYZ	uXYZ
0.709488	0.005191	0.514931	0.361227	-0.01028	0.514343	0.288692
0.069972	0.725392	0.837859	0.07926	0.588626	0.591023	0.55358
0.670419	0.729466	0.080486	0.929568	0.857485	0.582405	0.823728
0.502082	0.576626	0.986512	0.290118	0.458785	0.79104	0.619348
0.940632	0.619761	0.339195	0.976475	0.719904	0.76344	0.848758
0.544572	0.973507	0.552089	0.744654	0.989404	0.784213	0.943486
0.564359	0.523814	0.91649	0.320944	0.406153	0.828867	0.584905
1	0.497851	0.426878	0.851439	0.573862	0.804001	0.748247
0.497851	1	0.60844	0.674547	0.935152	0.818281	0.898933
0.426878	0.60844	1	0.250668	0.488337	0.749744	0.622616
0.851439	0.674547	0.250668	1	0.785733	0.702794	0.86724
0.573862	0.935152	0.488337	0.785733	1	0.748841	0.951494
0.804001	0.818281	0.749744	0.702794	0.748841	1	0.858283
0.748247	0.898933	0.622616	0.86724	0.951494	0.858283	1

Z	oXY	oXZ	oYZ	sXY	sXZ	xYZ	uXY	uXZ
0.06086	0.780351	0.044298	0.632452	0.682533	0.043476	0.704156	0.841368	0.044206
0.007588	0.617899	0.52844	0	0.706137	0.725201	0.011665	0.513996	0.353803
0.997988	0.035622	0.845712	0.774115	0.044711	0.665008	0.689513	0.027401	0.925729

sXZ	xYZ	uXY	uXZ	uYZ	vXYZ	uXYZ
0.718456	0.011557	0.509215	0.350513	0	0.541868	0.281254
0.070903	0.729868	0.839026	0.082454	0.581414	0.597211	0.55316
0.671819	0.731069	0.082452	0.929241	0.856515	0.583424	0.825243
0.505716	0.581259	0.975136	0.286087	0.458141	0.807618	0.611321
0.947557	0.620487	0.332061	0.971822	0.721828	0.775722	0.84372
0.542289	0.979107	0.553336	0.744579	0.985939	0.786991	0.944184
0.571498	0.519676	0.938438	0.321396	0.411891	0.804399	0.592478
0.970042	0.497605	0.427551	0.874117	0.572343	0.784336	0.755871
0.497605	0.971401	0.617344	0.673557	0.955563	0.788613	0.917874
0.427551	0.617344	0.972842	0.244413	0.484887	0.78151	0.607181
0.874117	0.673557	0.244413	0.984104	0.78777	0.723779	0.857538
0.572343	0.955563	0.484887	0.78777	0.982081	0.766702	0.940959
0.784336	0.788613	0.78151	0.723779	0.766702	0.929349	0.889013
0.755871	0.917874	0.607181	0.857538	0.940959	0.889013	0.982178

sXZ	xYZ	uXY	uXZ	uYZ	vXYZ	uXYZ
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-0.00897	-0.00637	0.005715	0.010714	-0.01028	-0.02752	0.007437
-0.00093	-0.00448	-0.00117	-0.00319	0.007212	-0.00619	0.00042
-0.0014	-0.0016	-0.00197	0.000326	0.00097	-0.00102	-0.00152
-0.00363	-0.00463	0.011376	0.004031	0.000644	-0.01658	0.008027
-0.00692	-0.00073	0.007134	0.004652	-0.00192	-0.01228	0.005038
0.002283	-0.0056	-0.00125	7.57E-05	0.003465	-0.00278	-0.0007
-0.00714	0.004138	-0.02195	-0.00045	-0.00574	0.024468	-0.00757
0.029958	0.000246	-0.00067	-0.02268	0.001519	0.019664	-0.00762
0.000246	0.028599	-0.0089	0.00099	-0.02041	0.029668	-0.01894
-0.00067	-0.0089	0.027158	0.006255	0.00345	-0.03177	0.015435
-0.02268	0.00099	0.006255	0.015896	-0.00204	-0.02099	0.009702
0.001519	-0.02041	0.00345	-0.00204	0.017919	-0.01786	0.010535
0.019664	0.029668	-0.03177	-0.02099	-0.01786	0.070651	-0.03073
-0.00762	-0.01894	0.015435	0.009702	0.010535	-0.03073	0.017822





uYZ	vXYZ	uXYZ
0.549448	0.576961	0.522404
	0	0.546955
0.824735	0.545256	0.283894
		0.79289