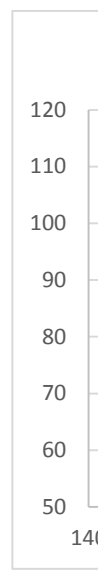


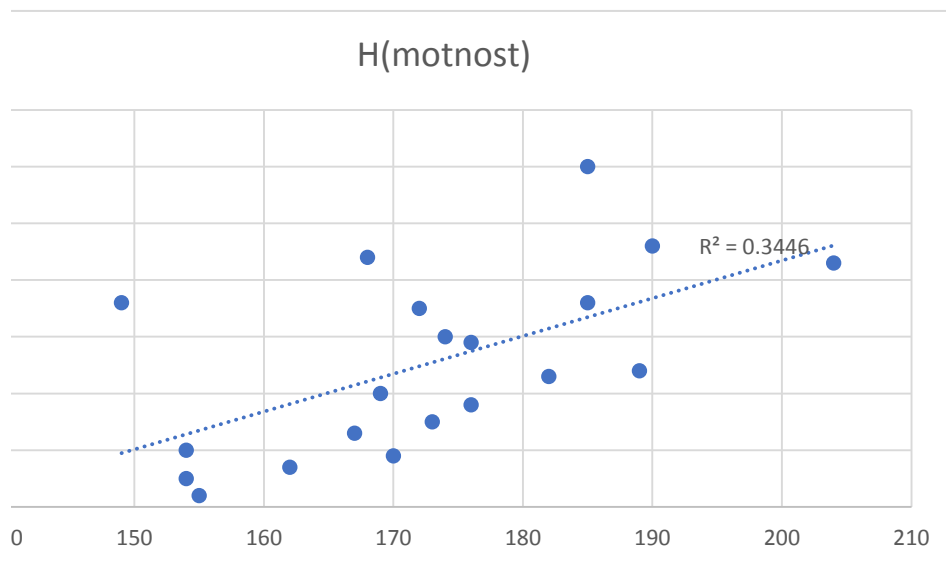
i	V(ýška)	H(motnost)	P(ohlaví)	Vi-mV	Hi-mH	Z _{Vi}	Z _{Hi}	Z _{Vi} X Z _{Hi}
1	172	85	1	-0.7	9.75	-0.05001	0.61408	-0.03071
2	170	59	0	-2.7	-16.25	-0.1929	-1.02347	0.197431
3	149	86	0	-23.7	10.75	-1.69327	0.677063	-1.14645
4	176	79	1	3.3	3.75	0.235771	0.236185	0.055686
5	185	86	1	12.3	10.75	0.878784	0.677063	0.594992
6	162	57	0	-10.7	-18.25	-0.76447	-1.14943	0.878707
7	182	73	1	9.3	-2.25	0.664446	-0.14171	-0.09416
8	190	96	1	17.3	20.75	1.236013	1.306888	1.615331
9	154	55	0	-18.7	-20.25	-1.33604	-1.2754	1.703978
10	167	63	1	-5.7	-12.25	-0.40724	-0.77154	0.314202
11	204	93	0	31.3	17.75	2.236255	1.117941	2.5
12	155	52	1	-17.7	-23.25	-1.26459	-1.46434	1.851798
13	174	80	1	1.3	4.75	0.09288	0.299167	0.027787
14	185	110	0	12.3	34.75	0.878784	2.188644	1.923345
15	169	70	1	-3.7	-5.25	-0.26435	-0.33066	0.087409
16	173	65	0	0.3	-10.25	0.021434	-0.64557	-0.01384
17	189	74	0	16.3	-1.25	1.164567	-0.07873	-0.09168
18	154	60	0	-18.7	-15.25	-1.33604	-0.96048	1.283243
19	176	68	1	3.3	-7.25	0.235771	-0.45662	-0.10766
20	168	94	0	-4.7	18.75	-0.3358	1.180923	-0.39655



m	172.7	75.25	0.5					kontrola
s	13.997	15.8774086				rVH	0.586993	0.586993

kontrola								
m	172.7	75.25	0.5			8.3E-16	0	
s	13.997	15.8774086	0.512989			1	1	

m z-skórů a následně kor



Statistická významnost

t 3.076115

df 18

p-hodnota 0.006511

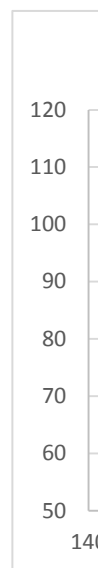
	<i>V(ýška)</i>	<i>H(motnost)</i>
<i>V(ýška)</i>	1	
<i>H(motnost)</i>	0.586993	1

r^2

0.34456

elaci

i	V(ýška)	H(motnost)	P(ohlaví)	Vi-mV	Hi-mH	Z _{Vi}	Z _{Hi}	Z _{Vi} X Z _{Hi}
2	170	59	0	-2.7	-16.25	-0.1929	-1.02347	0.197431
3	149	86	0	-23.7	10.75	-1.69327	0.677063	-1.14645
6	162	57	0	-10.7	-18.25	-0.76447	-1.14943	0.878707
9	154	55	0	-18.7	-20.25	-1.33604	-1.2754	1.703978
11	204	93	0	31.3	17.75	2.236255	1.117941	2.5
14	185	110	0	12.3	34.75	0.878784	2.188644	1.923345
16	173	65	0	0.3	-10.25	0.021434	-0.64557	-0.01384
17	189	74	0	16.3	-1.25	1.164567	-0.07873	-0.09168
18	154	60	0	-18.7	-15.25	-1.33604	-0.96048	1.283243
20	168	94	0	-4.7	18.75	-0.3358	1.180923	-0.39655
1	172	85	1	-0.7	9.75	-0.05001	0.61408	-0.03071
4	176	79	1	3.3	3.75	0.235771	0.236185	0.055686
5	185	86	1	12.3	10.75	0.878784	0.677063	0.594992
7	182	73	1	9.3	-2.25	0.664446	-0.14171	-0.09416
8	190	96	1	17.3	20.75	1.236013	1.306888	1.615331
10	167	63	1	-5.7	-12.25	-0.40724	-0.77154	0.314202
12	155	52	1	-17.7	-23.25	-1.26459	-1.46434	1.851798
13	174	80	1	1.3	4.75	0.09288	0.299167	0.027787
15	169	70	1	-3.7	-5.25	-0.26435	-0.33066	0.087409
19	176	68	1	3.3	-7.25	0.235771	-0.45662	-0.10766



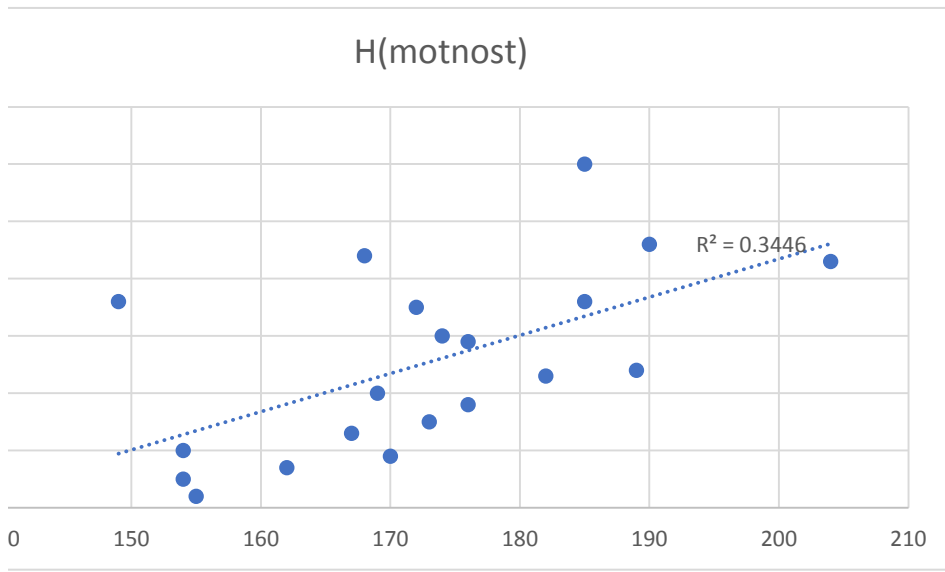
m 172.7 75.25 0.5
s 13.997 15.8774086

rVP

kontrola
0.139274

kontrola

m 172.7 75.25 0.5
s 13.997 15.8774086 0.512989



m z-skórů a následně kor
ženy

170
149
162
154
204
185
173
189
154
168

Statistická významnost

t 0.596703

df 18

p-hodnota 0.558137

r^2
0.019397

elací
muži

Dvouvýběrový t-test s rovností rozptylů

	<u>ženy</u>	<u>muži</u>
172		
176		
185	Stř. hodnot	170.8 174.6
182	Rozptyl	307.2889 98.26667
190	Pozorování	10 10
167	Společný rc	202.7778
155	Hyp. rozdíl	0
174	Rozdíl	18
169	t Stat	-0.5967
176	P(T<=t) (1)	0.279068
	t krit (1)	1.734064
	P(T<=t) (2)	0.558137
	t krit (2)	2.100922

Dvouvýběrový t-test s nerovností r

	<u>ženy</u>	<u>muži</u>
	Stř. hodnot	170.8 174.6
	Rozptyl	307.2889 98.26667
	Pozorování	10 10
	Hyp. rozdíl	0
	Rozdíl	14
	t Stat	-0.5967
	P(T<=t) (1)	0.280116
	t krit (1)	1.76131
	P(T<=t) (2)	0.560232
	t krit (2)	2.144787

rozptylů

e_i

- 10.21610875
- 14.45215195
- 26.53111063
- 1.552630165
- 2.559803342
- 11.12519478
- 8.442587717
- 9.230455107
- 7.798237601
- 8.454543012
- 3.091719951
- 11.46410725
- 3.884369459
- 26.55980334
- 2.786282306
- 10.44976089
- 12.10367525
- 2.798237601
- 9.447369835
- 21.87958734

a -39.7457
b 0.66587

$$H = a + bV + e$$

$$H_i^{\wedge} = a + bV_i$$

$$H_i = H_i^{\wedge} + e_i$$

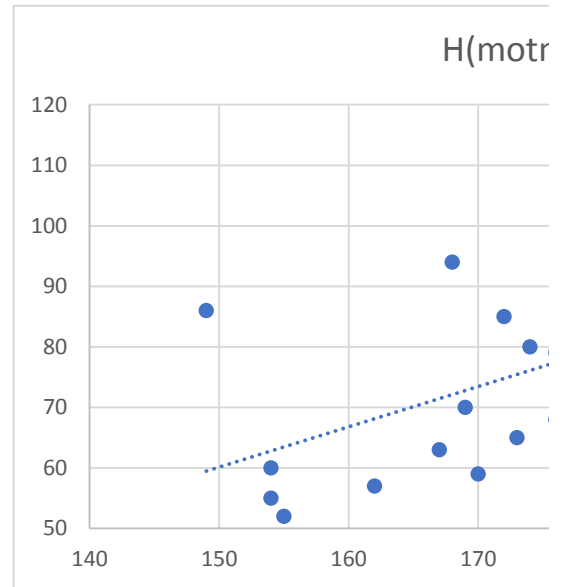
z toho

$$e_i = H_i^{\wedge} - H_i$$

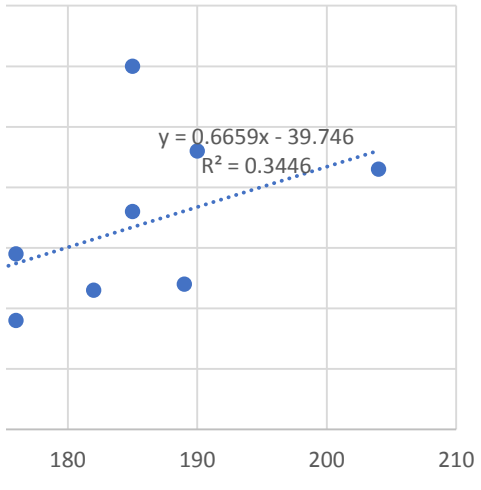
SS **3139.392**

r^2

- 0.344560347
- 4.53131E-16
- 0.809592276
- 0.586992629
- 0.344560347



rost)



i	V(ýška)	H(motnost)	P(ohlaví)	Vi-mV	Hi-mH	z_{Vi}	z_{Hi}	$z_{Vi} \times z_{Hi}$	H_i^{\wedge}
1	172	85	1	-0.7	9.75	-0.05001	0.61408	-0.03071	73.43364
2	170	59	0	-2.7	-16.25	-0.1929	-1.02347	0.197431	74.75705
3	149	86	0	-23.7	10.75	-1.69327	0.677063	-1.14645	60.4894
4	176	79	1	3.3	3.75	0.235771	0.236185	0.055686	76.15129
5	185	86	1	12.3	10.75	0.878784	0.677063	0.594992	82.26599
6	162	57	0	-10.7	-18.25	-0.76447	-1.14943	0.878707	69.32175
7	182	73	1	9.3	-2.25	0.664446	-0.14171	-0.09416	80.22776
8	190	96	1	17.3	20.75	1.236013	1.306888	1.615331	85.66305
9	154	55	0	-18.7	-20.25	-1.33604	-1.2754	1.703978	63.88646
10	167	63	1	-5.7	-12.25	-0.40724	-0.77154	0.314202	70.03658
11	204	93	0	31.3	17.75	2.236255	1.117941	2.5	97.85704
12	155	52	1	-17.7	-23.25	-1.26459	-1.46434	1.851798	61.88364
13	174	80	1	1.3	4.75	0.09288	0.299167	0.027787	74.79246
14	185	110	0	12.3	34.75	0.878784	2.188644	1.923345	84.94822
15	169	70	1	-3.7	-5.25	-0.26435	-0.33066	0.087409	71.39541
16	173	65	0	0.3	-10.25	0.021434	-0.64557	-0.01384	76.79528
17	189	74	0	16.3	-1.25	1.164567	-0.07873	-0.09168	87.66587
18	154	60	0	-18.7	-15.25	-1.33604	-0.96048	1.283243	63.88646
19	176	68	1	3.3	-7.25	0.235771	-0.45662	-0.10766	76.15129
20	168	94	0	-4.7	18.75	-0.3358	1.180923	-0.39655	73.39822

m	172.7	75.25	0.5						kontrola
s	13.997	15.8774086					rVH	0.586993	0.586993

	kontrola								rVe
m	172.7	75.25	0.5			8.3E-16	0		RHe
s	13.997	15.8774086	0.512989			1	1		R

e_i		P(ohlaví)	V(ýška)	H(motnost)
-11.56635832		1	172	85
15.75704619	a	0	170	59
-25.51059815	b1	0	149	86
-2.848711778	b2	1	176	79
-3.734007063		1	185	86
12.32175311	$H = a + b_1V + b_2P + e$	0	162	57
7.227758032		1	182	73
-10.33694889	$H_i^{\wedge} = a + b_1V_i + b_2P_i$	1	190	96
8.886460026		0	154	55
7.036583508	$H_i = H_i^{\wedge} + e_i$	1	167	63
4.857041774		0	204	93
9.883643888	z toho	1	155	52
-5.207535048		1	174	80
-25.05177929	$e_i = H_i^{\wedge} - H_i$	0	185	110
1.395406778		1	169	70
11.79528109	SS	0	173	65
13.66586725		0	189	74
3.886460026	R^2	0	154	60
8.151288222		1	176	68
-20.60177708		0	168	94

r^2

0.344560347

-0.000163671

-0.805127231

0.593233009

vícenásobná korelace ($r_{HH^{\wedge}}$)

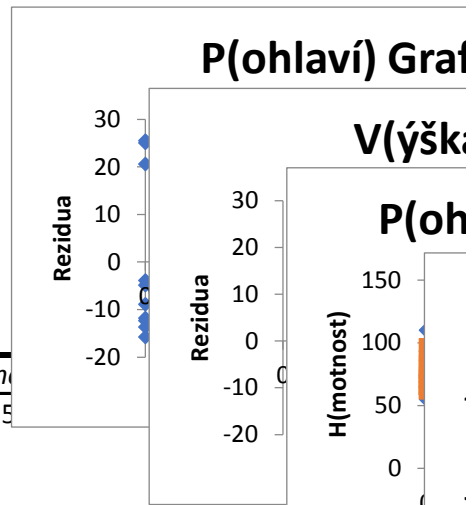
VÝSLEDEK

Regresní statistika	
Násobné R	0.593233
Hodnota s_e	0.351925
Nastavená	0.275681
Chyba stř. l	13.51277
Pozorování	20

ANOVA

	Rozdíl	SS	MS	F	ýznamn
Regrese	2	1685.635	842.8174	4.615774	0.025
Rezidua	17	3104.115	182.595		
Celkem	19	4789.75			

	Koeficienty	ba stř. hodr.	t Stat	Hodnota P	Dolní 95%	Horní 95%	Dolní 95%	Horní 95%
Hranice	-40.7691	38.44023	-1.06059	0.303715	-121.871	40.33266	-121.871	40.33266
P(ohlaví)	-2.68233	6.102572	-0.43954	0.665805	-15.5576	10.19297	-15.5576	10.19297
V(ýška)	0.679562	0.223665	3.038301	0.007422	0.20767	1.151454	0.20767	1.151454



REZIDUA

Pozorování	ivané H(mo	Rezidua	novaná rezidua
1	73.43314	11.56686	0.904947
2	74.75635	-15.7564	-1.23272
3	60.48556	25.51444	1.996154
4	76.15139	2.848614	0.222865
5	82.26744	3.732559	0.292021
6	69.31986	-12.3199	-0.96386
7	80.22876	-7.22876	-0.56555
8	85.66525	10.33475	0.808552
9	63.88336	-8.88336	-0.695
10	70.03533	-7.03533	-0.55042
11	97.86145	-4.86145	-0.38034
12	61.88059	-9.88059	-0.77302
13	74.79226	5.207737	0.407434
14	84.94978	25.05022	1.959835
15	71.39445	-1.39445	-0.1091
16	76.79504	-11.795	-0.9228
17	87.66802	-13.668	-1.06933
18	63.88336	-3.88336	-0.30382
19	76.15139	-8.15139	-0.63773
20	73.39723	20.60277	1.611883

PRAVDĚPODOBNOST

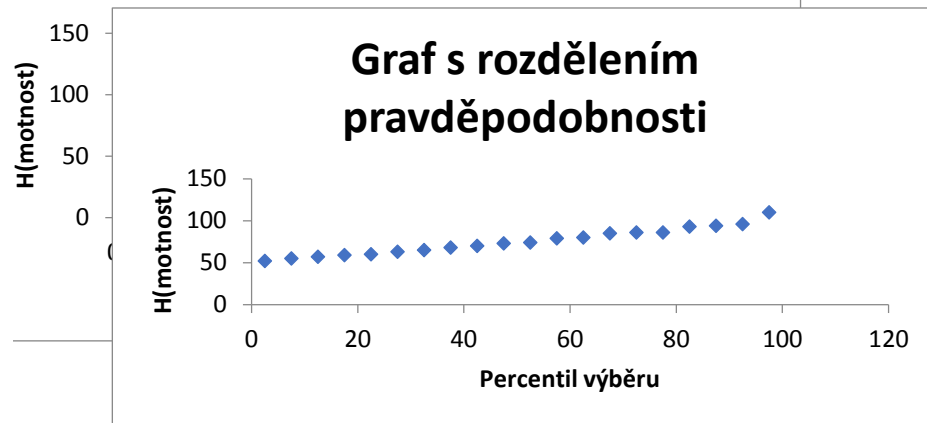
Percentil H(motnost)	
2.5	52
7.5	55
12.5	57
17.5	59
22.5	60
27.5	63
32.5	65
37.5	68
42.5	70
47.5	73
52.5	74
57.5	79
62.5	80
67.5	85
72.5	86
77.5	86
82.5	93
87.5	94
92.5	96
97.5	110

f s rezidui

a) Graf s rezidui

hlaví) Graf porovnání hodnot

V(ýška) Graf porovnání hodnot



i	Z(ávažnosť, H(asiči)	Š(koda)	zZ	zH	zŠ	zH^	zŠ^	
1	5	30	11	-0.03306	-0.17342	-0.26202	-0.03149	-0.03087
2	1	5	0.54	-1.35561	-1.04931	-1.01352	-1.29107	-1.26562
3	3	12	3.5	-0.69434	-0.80406	-0.80086	-0.66128	-0.64825
4	9	62	22	1.289486	0.947705	0.528277	1.228089	1.203886
5	10	96	38.5	1.620123	2.138906	1.713722	1.542983	1.512574
6	2	18	1.6	-1.02498	-0.59385	-0.93736	-0.97617	-0.95693
7	4	23	5.6	-0.3637	-0.41867	-0.64998	-0.34638	-0.33956
8	6	35	10.2	0.297574	0.001752	-0.3195	0.283405	0.27782
9	7	42	16	0.628211	0.246999	0.097206	0.5983	0.586508
10	6	23	18.2	0.297574	-0.41867	0.255266	0.283405	0.27782
11	2	13	4.1	-1.02498	-0.76903	-0.75775	-0.97617	-0.95693
12	9	76	31	1.289486	1.4382	1.174884	1.228089	1.203886
13	2	12	2.9	-1.02498	-0.80406	-0.84396	-0.97617	-0.95693
14	1	4	0.4	-1.35561	-1.08434	-1.02358	-1.29107	-1.26562
15	4	19	8.1	-0.3637	-0.55881	-0.47037	-0.34638	-0.33956
16	7	51	25	0.628211	0.562317	0.743813	0.5983	0.586508
17	3	15	6.2	-0.69434	-0.69895	-0.60688	-0.66128	-0.64825
18	10	89	45	1.620123	1.893659	2.180716	1.542983	1.512574
19	8	64	37	0.958848	1.017776	1.605955	0.913194	0.895197
20	3	10	6.1	-0.69434	-0.87413	-0.61406	-0.66128	-0.64825
m	5.1	34.95	14.647	1.33E-16	-7.8E-17	0		
sd	3.024462	28.54263	13.91882	1	1	1		

Podle vzorce

	r2	rHŠ.Z	r2	b1	
rZH	0.952386			0.952386	
rZŠ	0.933617	0.596157	0.355403	0.933617	
rHŠ	0.954285	0.91066			

pro nestandardizovaná data

bb1	8.987917
bb2	4.296582
a1	-10.8884
a2	-7.26557

ezH	ezŠ	nestandard H [^]	Š [^]	eH	eŠ
-0.14194	-0.23115	34.05121	14.21734	-4.05121	-3.21734
0.24176	0.252104	-1.90046	-2.96899	6.90046	3.508987
-0.14278	-0.15261	16.07537	5.624177	-4.07537	-2.12418
-0.28038	-0.67561	70.00288	31.40367	-8.00288	-9.40367
0.595923	0.201148	78.99079	35.70025	17.00921	2.799747
0.382324	0.019571	7.087457	1.327595	10.91254	0.272405
-0.07229	-0.31043	25.06329	9.920759	-2.06329	-4.32076
-0.28165	-0.59732	43.03913	18.51392	-8.03913	-8.31392
-0.3513	-0.4893	52.02704	22.81051	-10.027	-6.81051
-0.70208	-0.02255	43.03913	18.51392	-20.0391	-0.31392
0.207148	0.199184	7.087457	1.327595	5.912543	2.772405
0.210111	-0.029	70.00288	31.40367	5.997123	-0.40367
0.172113	0.11297	7.087457	1.327595	4.912543	1.572405
0.206724	0.242045	-1.90046	-2.96899	5.90046	3.368987
-0.21243	-0.13081	25.06329	9.920759	-6.06329	-1.82076
-0.03598	0.157305	52.02704	22.81051	-1.02704	2.189494
-0.03768	0.04137	16.07537	5.624177	-1.07537	0.575823
0.350676	0.668142	78.99079	35.70025	10.00921	9.299747
0.104582	0.710758	61.01496	27.10709	2.98504	9.892911
-0.21285	0.034186	16.07537	5.624177	-6.07537	0.475823

Pomocí funkce na základě analýzy

rHŠ.Z

0.596157

rHŠ.Z

0.596157

A

a	d
b	e
c	f

B

i	k
j	l

A * B

$a*i+d*j$	$a*k+d*l$
$b*i+e*j$	$b*k+e*l$
$c*i+f*j$	$c*k+f*l$

B

b1
b2
b3
b4
b5

B^T

b1	b2	b3	b4	b5
----	----	----	----	----

$B*B^T$

b1b1	b1b2	b1b3	b1b4	b1b5
b2b1	b2b2	b2b3	b2b4	b2b5

B

1
2
3
5
7

B^T

1	2	3	5	7
---	---	---	---	---

$B*B^T$

1	2	3	5	7
2	4	6	10	14
3	6	9	15	21
5	10	15	25	35
7	14	21	35	49

B

1	10
2	20
3	30
5	40
7	50

B^T

1	2	3	5	7
10	20	30	40	50

$B*B^T$

101	202	303	405	507
202	404	606	810	1014
303	606	909	1215	1521
405	810	1215	1625	2035
507	1014	1521	2035	2549