

國立交通大學試題紙

九十九學年度第二次
博士班資格考

科目：生物統計

日期：100 年 7 月 29 日 第 1 頁 共 2 頁

請“✓”明 ✓不可看書 可看書

* 請將答案依題號順序寫入答案卷

答題時字跡需工整，否則不予計分。Write your answers legibly; otherwise you will get zero score.

The tables (Z , t and the Chi-squared) are attached.

1. (50 points) For the population of adult males in the United States, the distribution of weights is approximately normal with mean $\mu = 172$ (pounds) and standard deviation $\sigma = 30$ (pounds).
 - a. (10 points) What is the probability for a randomly selected man to have weight larger than 200 pounds?
 - b. (10 points) Suppose you select a random sample which contains 25 men. What is the probability that their mean weight is larger than 200 pounds?
 - c. (15 points) Suppose that you do not know the values of μ and σ . After collecting a random sample of size $n = 25$, the sample mean is $\bar{X} = 180$ and the sample standard deviation is $S = 35$. Please construct a 95% confidence interval based on the data.
 - d. (15 points) The objective is to test whether $H_0: \mu = 172$ vs. $H_a: \mu \neq 172$ based on the above data ($n = 25$, $\bar{X} = 180$, $S = 35$). Let the level of significance be 5%. You need to calculate the range of the p-value (10 points) and state whether $H_0: \mu = 172$ should be rejected or not (5 points).

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2. (50 points) Consider a discrete random variable X which has the following probability function:

	$x=0$	$x=1$	$x=2$	$x=3$
$\Pr(X=x)$	0.2	0.3	0.4	0.1
$F(x)$				

Table 2.1

- (12 points) Please compute $E(X)$ and $Var(X)$
- (6 points) Derive $F(x) = \Pr(X \leq x)$ for $x = 0, 1, 2, 3$
- (4 points) Draw the above function $F(x)$ for $-1 \leq x \leq 5$ with the value of x shown on the horizontal-axis and the value of $F(x)$ on the vertical axis.

Suppose one collects a random sample (X_1, \dots, X_{100}) which contains 100 observations. Each of X_i has 4 possible values, namely 0, 1, 2, 3.

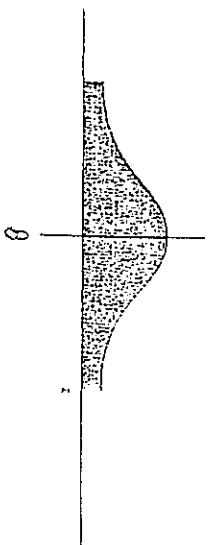
The data are presented in the following table.

	$x=0$	$x=1$	$x=2$	$x=3$	Total
# of Observation s	12	20	50	18	100
Expected number of observations					100

Table 2.2

- (12 points) Please calculate the "expected number of observations" for $x=0, 1, 2, 3$ assuming that the sample is drawn from the population with the probability function stated in Table 2.1.
- (16 points) Use the Chi-squared test to test whether the sample follows the distribution in Table 2.1. Let the level of significance be 5%.

$$F_Z(z) = P\{Z \leq z\}$$

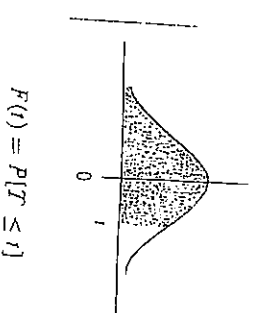


Normal

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0014	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0060	0.0057	0.0054	0.0052	0.0051	0.0049	0.0048	0.0046
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0066	0.0065	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0653	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0883	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1213	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1921	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5359
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9544	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9978	0.9979	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

TABLE VI
Cumulative T distribution

	.40	.25	.10	.05	.025	.01	.005	.001	.0005 (Area to right)
v	.60	.75	.90	.95	.975	.99	.995	.999	.9995 (Area to left)
1	0.325	1.000	3.078	6.314	12.706	31.821	63.657	318.317	636.607
2	0.289	0.816	1.866	2.920	4.303	6.965	9.925	22.327	31.598
3	0.277	0.765	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.271	0.741	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.267	0.727	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.265	0.718	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.263	0.711	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.262	0.706	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.261	0.703	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.260	0.700	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.260	0.697	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.259	0.695	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.259	0.694	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.258	0.692	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.258	0.691	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.258	0.690	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.257	0.689	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.257	0.688	1.330	1.734	2.101	2.552	2.878	3.611	3.922
19	0.257	0.688	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.257	0.687	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.257	0.686	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.256	0.686	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.256	0.685	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.256	0.685	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.256	0.684	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.256	0.684	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.256	0.684	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.256	0.683	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.256	0.683	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.256	0.683	1.310	1.697	2.042	2.457	2.750	3.385	3.646
31	0.256	0.682	1.309	1.696	2.040	2.453	2.744	3.375	3.633
32	0.255	0.682	1.309	1.694	2.037	2.449	2.738	3.365	3.622
33	0.255	0.682	1.308	1.692	2.035	2.445	2.733	3.356	3.611
34	0.255	0.682	1.307	1.691	2.032	2.441	2.728	3.348	3.601
35	0.255	0.682	1.306	1.690	2.030	2.438	2.724	3.340	3.591
36	0.255	0.681	1.306	1.688	2.028	2.434	2.719	3.333	3.582
37	0.255	0.681	1.305	1.687	2.026	2.431	2.715	3.326	3.574
38	0.255	0.681	1.304	1.686	2.024	2.429	2.712	3.319	3.566
39	0.255	0.681	1.304	1.685	2.023	2.426	2.708	3.313	3.558
40	0.255	0.681	1.303	1.684	2.021	2.423	2.704	3.307	3.551
41	0.255	0.681	1.303	1.683	2.020	2.421	2.701	3.301	3.544
42	0.255	0.680	1.302	1.682	2.018	2.418	2.698	3.296	3.538
43	0.255	0.680	1.302	1.681	2.017	2.416	2.695	3.291	3.532
44	0.255	0.680	1.301	1.680	2.015	2.414	2.692	3.286	3.526
45	0.255	0.680	1.301	1.679	2.014	2.412	2.690	3.281	3.520
46	0.255	0.680	1.300	1.679	2.013	2.410	2.687	3.277	3.515
47	0.255	0.680	1.300	1.678	2.012	2.408	2.685	3.273	3.510
48	0.255	0.680	1.299	1.677	2.011	2.407	2.682	3.269	3.505
49	0.255	0.680	1.299	1.677	2.010	2.405	2.680	3.265	3.500
50	0.255	0.679	1.299	1.676	2.009	2.403	2.678	3.261	3.496
51	0.255	0.679	1.298	1.675	2.008	2.402	2.676	3.258	3.492
52	0.255	0.679	1.298	1.675	2.007	2.400	2.674	3.255	3.488
53	0.255	0.679	1.298	1.674	2.006	2.399	2.672	3.251	3.484
54	0.255	0.679	1.297	1.674	2.005	2.397	2.670	3.248	3.480
55	0.255	0.679	1.297	1.673	2.004	2.396	2.668	3.245	3.476
56	0.255	0.679	1.297	1.673	2.003	2.395	2.667	3.242	3.473
57	0.255	0.679	1.297	1.672	2.002	2.394	2.665	3.239	3.470
58	0.255	0.679	1.296	1.672	2.002	2.392	2.663	3.237	3.466
59	0.254	0.679	1.296	1.671	2.001	2.391	2.662	3.234	3.463
60	0.254	0.679	1.296	1.671	2.000	2.390	2.660	3.232	3.460
61	0.254	0.679	1.296	1.670	2.000	2.389	2.659	3.229	3.457
62	0.254	0.678	1.295	1.670	1.999	2.388	2.658	3.227	3.455
63	0.254	0.678	1.295	1.669	1.998	2.387	2.656	3.225	3.452
64	0.254	0.678	1.295	1.669	1.998	2.386	2.655	3.223	3.449
65	0.254	0.678	1.295	1.669	1.997	2.385	2.654	3.221	3.447



T-table

APPENDIX B Statistical Tables

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TABLE VI
(Concluded)

p	.40	.25	.10	.05	.025	.01	.005	.001	.0005 (Area to right) .9995 (Area to left)
66	0.254	0.678	1.295	1.668	1.997	2.384	2.652	3.218	3.444
67	0.254	0.678	1.294	1.668	1.996	2.383	2.651	3.217	3.442
68	0.254	0.678	1.294	1.668	1.995	2.382	2.650	3.215	3.440
69	0.254	0.678	1.294	1.667	1.995	2.382	2.649	3.213	3.437
70	0.254	0.678	1.294	1.667	1.994	2.381	2.648	3.211	3.435
71	0.254	0.678	1.294	1.667	1.994	2.380	2.647	3.209	3.433
72	0.254	0.678	1.293	1.666	1.993	2.379	2.646	3.207	3.431
73	0.254	0.678	1.293	1.666	1.993	2.379	2.645	3.206	3.429
74	0.254	0.678	1.293	1.666	1.993	2.378	2.644	3.204	3.427
75	0.254	0.678	1.293	1.665	1.992	2.377	2.643	3.203	3.425
76	0.254	0.678	1.293	1.665	1.992	2.376	2.642	3.201	3.423
77	0.254	0.678	1.293	1.665	1.991	2.376	2.641	3.200	3.422
78	0.254	0.678	1.292	1.665	1.991	2.375	2.640	3.198	3.420
79	0.254	0.678	1.292	1.664	1.990	2.375	2.640	3.197	3.418
80	0.254	0.678	1.292	1.664	1.990	2.374	2.639	3.195	3.416
81	0.254	0.678	1.292	1.664	1.990	2.373	2.638	3.194	3.415
82	0.254	0.677	1.292	1.664	1.989	2.373	2.637	3.193	3.413
83	0.254	0.677	1.292	1.663	1.989	2.372	2.636	3.191	3.412
84	0.254	0.677	1.292	1.663	1.989	2.372	2.636	3.190	3.410
85	0.254	0.677	1.292	1.663	1.988	2.371	2.635	3.189	3.409
86	0.254	0.677	1.291	1.663	1.988	2.371	2.634	3.188	3.407
87	0.254	0.677	1.291	1.663	1.988	2.370	2.634	3.187	3.406
88	0.254	0.677	1.291	1.662	1.987	2.369	2.633	3.186	3.405
89	0.254	0.677	1.291	1.662	1.987	2.369	2.632	3.184	3.403
90	0.254	0.677	1.291	1.662	1.987	2.369	2.632	3.183	3.402
91	0.254	0.677	1.291	1.662	1.986	2.368	2.631	3.182	3.401
92	0.254	0.677	1.291	1.662	1.986	2.368	2.630	3.181	3.400
93	0.254	0.677	1.291	1.661	1.986	2.367	2.630	3.180	3.398
94	0.254	0.677	1.291	1.661	1.986	2.367	2.629	3.179	3.397
95	0.254	0.677	1.291	1.661	1.985	2.366	2.629	3.178	3.396
96	0.254	0.677	1.290	1.661	1.985	2.366	2.628	3.177	3.395
97	0.254	0.677	1.290	1.661	1.985	2.365	2.627	3.176	3.394
98	0.254	0.677	1.290	1.661	1.984	2.365	2.627	3.176	3.393
99	0.254	0.677	1.290	1.660	1.984	2.365	2.626	3.175	3.392
100	0.254	0.677	1.290	1.660	1.984	2.364	2.626	3.174	3.391
∞	0.253	0.674	1.282	1.645	1.960	2.326	2.576	3.090	3.291

Table entry for p is the critical value x^* with probability p lying to its right.

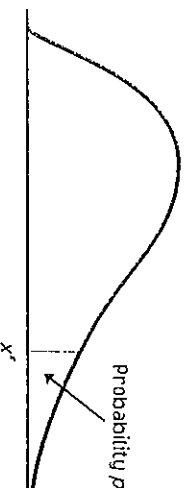


TABLE E Chi-square distribution critical values

df	.25	.20	.15	.10	.05	.025	.02	.01	.005	.0025	.001	.0005
1	1.32	1.64	2.07	2.71	3.84	5.02	5.41	6.63	7.88	9.14	10.83	12.12
2	2.77	3.22	3.79	4.61	5.99	7.38	7.82	9.21	10.60	11.98	13.82	15.20
3	4.11	4.64	5.32	6.25	7.81	9.35	9.84	11.34	12.84	14.32	16.27	17.73
4	5.39	5.99	6.74	7.78	9.49	11.14	11.67	13.28	14.86	16.42	18.47	20.00
5	6.63	7.29	8.12	9.24	11.07	12.83	13.39	15.09	16.75	18.39	20.51	22.11
6	7.84	8.56	9.45	10.64	12.59	14.45	15.03	16.81	18.55	20.25	22.46	24.10
7	9.04	9.80	10.75	12.02	14.07	16.01	16.62	18.48	20.28	22.04	24.32	26.02
8	10.22	11.03	12.03	13.36	15.51	17.53	18.17	20.09	21.95	23.77	26.12	27.87
9	11.39	12.24	13.29	14.68	16.92	19.02	19.68	21.67	23.59	25.46	27.88	29.67
10	12.55	13.44	14.53	15.99	18.31	20.48	21.16	23.21	25.19	27.11	29.59	31.42
11	13.70	14.63	15.77	17.28	19.68	21.92	22.62	24.72	26.76	28.73	31.26	33.14
12	14.85	15.81	16.99	18.55	21.03	23.34	24.05	26.22	28.30	30.32	32.91	34.82
13	15.98	16.98	18.20	19.81	22.36	24.74	25.47	27.69	29.82	31.88	34.53	36.48
14	17.12	18.15	19.41	21.06	23.68	26.12	26.87	29.14	31.32	33.43	36.12	38.11
15	18.25	19.31	20.60	22.31	25.00	27.49	28.26	30.58	32.80	34.95	37.70	39.72
16	19.37	20.47	21.79	23.54	26.30	28.85	29.63	32.00	34.27	36.46	39.25	41.31
17	20.49	21.61	22.98	24.77	27.59	30.19	31.00	33.41	35.72	37.95	40.79	42.88
18	21.60	22.76	24.16	25.99	28.87	31.53	32.35	34.81	37.16	39.42	42.31	44.43
19	22.72	23.90	25.33	27.20	30.14	32.85	33.69	36.19	38.58	40.88	43.82	45.97
20	23.83	25.04	26.50	28.41	31.41	34.17	35.02	37.57	40.00	42.34	45.31	47.50
21	24.93	26.17	27.66	29.62	32.67	35.48	36.34	38.93	41.40	43.78	46.80	49.01
22	26.04	27.30	28.82	30.81	33.92	36.78	37.66	40.29	42.80	45.20	48.27	50.51
23	27.14	28.43	29.98	32.01	35.17	38.08	38.97	41.64	44.18	46.62	49.73	52.00
24	28.24	29.55	31.13	33.20	36.42	39.36	40.27	42.98	45.56	48.03	51.18	53.48
25	29.34	30.68	32.28	34.38	37.65	40.65	41.57	44.31	46.93	49.44	52.62	54.95
26	30.43	31.79	33.43	35.56	38.89	41.92	42.86	45.64	48.29	50.83	54.05	56.41
27	31.53	32.91	34.57	36.74	40.11	43.19	44.14	46.96	49.64	52.22	55.48	57.86
28	32.62	34.03	35.71	37.92	41.34	44.46	45.42	48.28	50.99	53.59	56.89	59.30
29	33.71	35.14	36.85	39.09	42.56	45.72	46.69	49.59	52.34	54.97	58.30	60.73
30	34.80	36.25	37.99	40.26	43.77	46.98	47.96	50.89	53.67	56.33	59.70	62.16
40	45.62	47.27	49.24	51.81	55.76	59.34	60.44	63.69	66.77	69.70	73.40	76.09
50	56.33	58.16	60.35	63.17	67.50	71.42	72.61	76.15	79.49	82.66	86.66	89.56
60	66.98	68.97	71.34	74.40	79.08	83.30	84.58	88.38	91.95	95.34	99.61	102.7
80	88.13	90.41	93.11	96.58	101.9	106.6	108.1	112.3	116.3	120.1	124.8	128.3
100	109.1	111.7	114.7	118.5	124.3	129.6	131.1	135.8	140.2	144.3	149.4	153.2