



UNIVERSITI KUALA LUMPUR BUSINESS SCHOOL

FINAL EXAMINATION JULY 2024 SEMESTER

COURSE CODE	: EBB30803
COURSE NAME	: INVESTMENT MANAGEMENT
PROGRAMME NAME	: BACHELOR OF BUSINESS ADMINISTRATION (HONS) IN ISLAMIC FINANCE
DATE	: 23 SEPTEMBER 2024
TIME	: 9.00 AM – 12.00 PM
DURATION	: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please **CAREFULLY** read the instructions given in the question paper.
2. This question paper has information printed on both sides of the paper.
3. This question paper consists of **FOUR (4)** questions.
4. Answer **ALL** questions.
5. Please write your answers on the answer booklet provided.
6. All questions must be answered in **English** (any other language is not allowed).
7. **This question paper must not be removed from the examination hall.**
8. Present and future values tables and formulas has been appended for your reference.

THERE ARE NINE (9) PAGES OF QUESTIONS, INCLUDING THIS PAGE.

SECTION A (Total: 100 marks)**INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 1**

- a. As a Financial Executive at Angsana Sdn Bhd, you have been asked by your manager to consider two mutually exclusive projects. Both projects require an initial outlay of RM200,000. The annual after-tax cash flows of Project A are expected to generate RM40,000 in the first year, while in the second year, they are expected to increase by RM4,000. The cash flow generated in the third year is RM12,000 lower than the RM64,000 generated in the fourth year. Project A manages to gain up to the fifth year with a total of RM120,000.

In Project B, the cash flow generated RM80,000 in first year, RM100,000 in the second year. For the the third year, it is RM8,000 more than the third year of Project A and RM70,000 for both the fourth and fifth years.

Based on the payback period method, which project would you choose and state your justification for the chosen project.

(10 marks)

- b. The next day, you were asked by the investment department to evaluate the following two investment proposals. The cash flows of the proposals are as follows:

Year	Cash Flows	
	Project 1	Project 2
0	(RM20,000)	(RM60,000)
1	RM10,000	RM30,000
2	RM6,000	RM16,000
3	RM8,000	RM18,000
4	RM7,200	RM22,000

Apply the net present value approach as well as the profitability index approach for each project. Which of the above projects would you accept? Assume a cost of capital is 10%.

(15 marks)

Question 2

- a. The CEO of Vicox Sdn. Bhd. has asked you, an experienced financial analyst, to perform a detailed financial statement analysis of the company for the year ended 31 December 2021. Below are the financial ratios of Vicox Sdn. Bhd. for the year ending 2020, as well as the financial statement for the year 2020.

Vicox Sdn. Bhd. Statement of Financial Position as at December 31, 2020

	RM
Non-Current Assets	5,292,500
Current assets	
Accounts Receivable	700,000
Inventories	2,500,000
Total Assets	8,532,500
Financed by:	
Ordinary Share Capital	4,000,000
Retained Earnings	2,067,500
Non Current Liabilities	1,250,000
Current Liabilities	
Bank Overdraft	180,000
Trade Creditors	1,160,000
	8,532,500

Vicox Sdn. Bhd Statement of Comprehensive Income For the year ended 31
December 2020

	RM
Sales	8,000,000
Less: Cost of goods solds	(6,250,000)
Gross Profit	1,750,000
Less: Expenses	
Administration	(450,000)
Depreciation	(400,000)
Interest expenses	<u>(150,000)</u>
Profit Before Tax	750,000
Less: Tax	<u>(210,000)</u>
Profit after Tax	<u>540,000</u>

Industry Average

Quick Ratio	0.7x
Average Collection Period	40 days

Times Interest Earned	5.5x
Net Profit Margin	7.4%
Return on assets	7.77%

Additional information:

- (i) 80% of total sales are credit sales.
- (ii) Use a 360-day per year to calculate the ratios.

Required:

Calculate the above ratios for Vicox Sdn. Bhd. for the financial year 2020 and justify your answer by comparing with industry average indicator given.

(20 marks)

- b. State FIVE (5) limitations of ratio analysis.

(5 marks)

Question 3

Your board of directors is considering an investment from another firm. The firm has provided its previous details on dividend transactions and financial rewards history as shown below.

- a. Dlaura Corporation has a net profit after tax RM35,000 and total shareholders' equity of RM300,000. Currently, the firm's market price and number of common share outstanding is RM45 and 7600 shares respectively. The firm has just paid dividend totaling RM17,000. From this information you are required to find those listed value in order to help your board of director making their decision:

- i. Earnings per share

(5 marks)

- ii. Dividend per share

(5 marks)

- iii. Dividend pay-out ratio

(5 marks)

- iv. Return on equity

(5 marks)

- b. State any FIVE (5) advantages of owning the common stock.

(5 marks)

Question 4

- a. A company issues a bond with a par value of RM1000, a coupon rate of 8%, and a maturity of 5 years. The bond pays interest semi-annually, and the required rate of return (market interest rate) is 10% per annum, compounded semi-annually. What is the present value of the bond?

(5 marks)

- b. A bond has the following terms:

Annual coupon interest	RM80
Term	8 years
Principal	RM1,000

If the market price of the bond is RM850 at the end of maturity date, calculate the YTM.

(5 marks)

- c. Explain FIVE (5) types of bonds offered in the market.

(15 marks)

END OF EXAM QUESTION PAPER

Present value and Future value tables

Table 1 – Future value interest factors for single cash flows. Formula: $FV = (1 + k)^{n\Delta t}$

Period (n) / per cent (k)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%
1	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.1600	1.2000
2	1.0201	1.0404	1.0609	1.0816	1.1025	1.1236	1.1449	1.1664	1.1881	1.2100	1.2321	1.2544	1.2769	1.2996	1.3225	1.3456	1.4400
3	1.0303	1.0612	1.0927	1.1249	1.1576	1.1910	1.2250	1.2597	1.2950	1.3310	1.3676	1.4049	1.4429	1.4815	1.5209	1.5609	1.7280
4	1.0406	1.0824	1.1255	1.1699	1.2155	1.2625	1.3108	1.3605	1.4116	1.4641	1.5181	1.5735	1.6305	1.6890	1.7490	1.8106	2.0736
5	1.0510	1.1041	1.1593	1.2167	1.2763	1.3382	1.4026	1.4693	1.5386	1.6105	1.6851	1.7623	1.8424	1.9254	2.0114	2.1003	2.4883
6	1.0615	1.1262	1.1941	1.2653	1.3401	1.4185	1.5007	1.5869	1.6771	1.7716	1.8704	1.9738	2.0820	2.1950	2.3131	2.4364	2.9860
7	1.0721	1.1487	1.2299	1.3159	1.4071	1.5036	1.6058	1.7138	1.8280	1.9487	2.0762	2.2107	2.3526	2.5023	2.6600	2.8262	3.5832
8	1.0829	1.1717	1.2668	1.3686	1.4775	1.5938	1.7182	1.8509	1.9926	2.1436	2.3045	2.4760	2.6584	2.8526	3.0590	3.2784	4.2998
9	1.0937	1.1951	1.3048	1.4233	1.5513	1.6895	1.8385	1.9990	2.1719	2.3579	2.5580	2.7731	3.0040	3.2519	3.5179	3.8030	5.1598
10	1.1046	1.2190	1.3439	1.4802	1.6289	1.7908	1.9672	2.1589	2.3674	2.5937	2.8394	3.1058	3.3946	3.7072	4.0456	4.4114	6.1917
11	1.1157	1.2434	1.3842	1.5395	1.7103	1.8983	2.1049	2.3316	2.5804	2.8531	3.1518	3.4785	3.8359	4.2262	4.6524	5.1173	7.4301
12	1.1268	1.2682	1.4258	1.6010	1.7959	2.0122	2.2522	2.5182	2.8127	3.1384	3.4985	3.8960	4.3345	4.8179	5.3503	5.9360	8.9161
13	1.1381	1.2936	1.4685	1.6651	1.8856	2.1329	2.4098	2.7196	3.0658	3.4523	3.8833	4.3635	4.8980	5.4924	6.1528	6.8858	10.6993
14	1.1495	1.3195	1.5126	1.7317	1.9799	2.2609	2.5785	2.9372	3.3417	3.7975	4.3104	4.8871	5.5348	6.2613	7.0757	7.9875	12.8392
15	1.1610	1.3459	1.5580	1.8009	2.0789	2.3966	2.7590	3.1722	3.6425	4.1772	4.7846	5.4736	6.2543	7.1379	8.1371	9.2655	15.4070
16	1.1726	1.3728	1.6047	1.8730	2.1829	2.5404	2.9522	3.4259	3.9703	4.5950	5.3109	6.1304	7.0673	8.1372	9.3576	10.7480	18.4884
17	1.1843	1.4002	1.6528	1.9479	2.2920	2.6928	3.1588	3.7000	4.3276	5.0545	5.8951	6.8660	7.9861	9.2765	10.7613	12.4677	22.1861
18	1.1961	1.4282	1.7024	2.0258	2.4066	2.8543	3.3799	3.9960	4.7171	5.5599	6.5436	7.6900	9.0243	10.5752	12.3755	14.4625	26.6233
19	1.2081	1.4568	1.7535	2.1068	2.5270	3.0256	3.6165	4.3157	5.1417	6.1159	7.2633	8.6128	10.1974	12.0557	14.2318	16.7765	31.9480
20	1.2202	1.4859	1.8061	2.1911	2.6533	3.2071	3.8697	4.6610	5.6044	6.7275	8.0623	9.6463	11.5231	13.7435	16.3665	19.4608	38.3376
21	1.2324	1.5157	1.8603	2.2788	2.7860	3.3996	4.1406	5.0338	6.1088	7.4002	8.9492	10.8038	13.0211	15.6676	18.8215	22.5745	46.0051
22	1.2447	1.5460	1.9161	2.3699	2.9253	3.6035	4.4304	5.4365	6.6586	8.1403	9.9336	12.1003	14.7138	17.8610	21.6447	26.1864	55.2061
23	1.2572	1.5769	1.9736	2.4647	3.0715	3.8197	4.7405	5.8715	7.2579	8.9543	11.0263	13.5523	16.6366	20.3616	24.8915	30.3762	66.2474
24	1.2697	1.6084	2.0328	2.5633	3.2251	4.0489	5.0724	6.3412	7.9111	9.8497	12.2392	15.1786	18.7881	23.2122	28.6252	35.2364	79.4968
25	1.2824	1.6406	2.0938	2.6658	3.3864	4.2919	5.4274	6.8485	8.6231	10.8347	13.5855	17.0001	21.2305	26.4619	32.9190	40.8742	95.3962

Present value and Future value tables

Table 2 - Future value interest factors for an annuity. Formula: $FV = [(1 + k)^n - 1] / k$

Period (n), per cent (k)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%
1	1.01000	1.02010	1.03030	1.04070	1.05130	1.06210	1.07310	1.08430	1.09570	1.10730	1.11910	1.13110	1.14330	1.15570	1.16830	1.18110	1.20000
2	2.01010	2.02040	2.03090	2.04160	2.05250	2.06360	2.07490	2.08640	2.09810	2.10990	2.12190	2.13410	2.14650	2.15910	2.17190	2.18490	2.20000
3	3.03010	3.06040	3.09090	3.12160	3.15250	3.18360	3.21490	3.24640	3.27810	3.31000	3.34210	3.37440	3.40690	3.43960	3.47250	3.50560	3.64000
4	4.06040	4.12160	4.18360	4.24550	4.31010	4.37460	4.43890	4.50310	4.56710	4.63100	4.69470	4.75820	4.82150	4.88460	4.94750	5.01030	5.36000
5	5.10100	5.20400	5.30910	5.41630	5.52560	5.63710	5.75070	5.86640	5.98420	6.10410	6.22780	6.35520	6.48630	6.62110	6.76060	6.90480	7.44150
6	6.15200	6.30810	6.46840	6.63300	6.80190	6.97530	7.15330	7.33590	7.52330	7.71550	7.91290	8.11520	8.32270	8.53550	8.75370	8.97750	9.92990
7	7.21350	7.43430	7.66250	7.89830	8.14200	8.39380	8.65400	8.92280	9.20040	9.48720	9.78330	10.08900	10.40470	10.73050	11.06680	11.41390	12.91590
8	8.28570	8.59300	8.89230	9.19420	9.49910	9.80750	10.11980	10.43660	10.75810	11.08450	11.41640	11.75390	12.09730	12.44680	12.80250	13.16480	15.49910
9	9.36050	9.72460	10.15010	10.58020	11.02660	11.49110	11.97600	12.48240	12.99040	13.51010	14.04260	14.58900	15.15050	15.72730	16.32060	16.93170	20.79000
10	10.46220	10.94970	11.46390	12.00510	12.57790	13.18060	13.81640	14.48660	15.19290	15.93740	16.72200	17.54870	18.41970	19.33730	20.30370	21.32150	25.95870
11	11.56680	12.16870	12.80780	13.48540	14.20680	14.97160	15.78360	16.64550	17.56030	18.53120	19.56140	20.65460	21.81430	23.04450	24.34930	25.73290	32.15040
12	12.68250	13.41210	14.19200	15.02580	15.91710	16.86990	17.88850	18.97710	20.14070	21.38430	22.71320	24.13310	25.65020	27.27070	29.00170	30.85020	39.58050
13	13.80930	14.68030	15.61780	16.62580	17.71300	18.88210	20.14660	21.50950	22.98340	24.58270	26.21160	28.02910	29.98470	32.08870	34.35190	36.78620	48.49650
14	14.94740	15.97390	17.08630	18.29190	19.59860	21.01150	22.54060	24.20950	25.99190	27.90490	30.00490	32.34960	34.88270	37.58110	40.50470	43.67200	59.19690
15	16.09690	17.29310	18.59890	20.02360	21.57860	23.27600	25.12600	27.15210	29.35090	31.77250	34.40540	37.27970	40.41175	43.87240	47.58010	51.63950	72.03510
16	17.25790	18.63930	20.15690	21.82450	23.65750	25.67250	27.88610	30.32430	33.00340	35.94970	39.18990	42.75330	46.67170	50.98040	55.71750	60.92500	87.44210
17	18.43040	20.01210	21.76160	23.69750	25.84040	28.21290	30.84020	33.75020	36.97370	40.54470	44.50080	48.88370	53.73910	59.11760	65.07510	71.67300	105.93100
18	19.61470	21.41230	23.41440	25.64540	28.13240	30.90570	33.99500	37.45020	41.30130	45.59920	50.39590	55.74970	61.72510	68.39410	75.83640	84.14070	128.11700
19	20.81090	22.84060	25.11690	27.67120	30.53900	33.76000	37.37500	41.44630	46.01850	51.15910	56.93950	63.43970	70.74940	78.96920	88.21180	98.60320	154.74000
20	22.01900	24.29740	26.87040	29.77310	33.06600	36.78560	40.99550	45.76200	51.15010	57.27500	64.20280	72.05240	80.94680	91.02490	102.44400	115.38000	186.68300
21	23.23920	25.78330	28.67650	31.96920	35.71930	39.59270	44.86520	50.43290	56.75450	64.00250	72.26510	81.69870	92.46990	104.76800	118.81000	134.84100	225.02500
22	24.47160	27.20900	30.53600	34.24300	38.50520	43.39230	49.00570	55.45600	62.87330	71.40270	81.21430	92.50260	105.43010	120.43600	137.63200	157.41500	271.03100
23	25.71630	28.84500	32.45290	36.61790	41.43050	46.59580	53.43610	60.89930	69.53190	79.54300	91.14790	104.60300	120.20050	138.29700	159.27600	183.60100	326.23700
24	26.97350	30.42190	34.42650	39.08260	44.50200	50.61560	58.17670	66.76480	75.79980	88.49730	102.17400	118.15500	136.83100	158.65900	184.16800	213.97800	392.48400
25	28.24320	32.03030	36.45930	41.64590	47.72710	54.86450	63.24900	73.10590	84.79090	98.34710	114.41300	133.33400	155.62000	181.87100	212.79300	249.21400	471.98100

Present value and Future value tables

Table 3 - Present value interest factors for single cash flows. $PV = 1/(1 + k)^n$

Period (n) / per cent (k)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	0.7432	0.6944
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.5787
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.4823
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4019
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323	0.4104	0.3349
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	0.3538	0.2791
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	0.3050	0.2326
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.1938
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.1615
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1346
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1122
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.0935
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.0779
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.1079	0.0649
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069	0.0930	0.0541
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078	0.0929	0.0802	0.0451
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808	0.0691	0.0376
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829	0.0703	0.0596	0.0313
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611	0.0514	0.0261
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926	0.0768	0.0638	0.0531	0.0443	0.0217
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560	0.0462	0.0382	0.0181
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601	0.0491	0.0402	0.0329	0.0151
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431	0.0349	0.0284	0.0126
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471	0.0378	0.0304	0.0245	0.0105

Present value and Future value tables

Table 4 - Present value interest factors for an annuity. Formula: $PV = [1 - 1/(1 + k)^n] / k$

Period (n) / per cent (k)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257	1.6052	1.5278
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.1065
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.5887
5	4.8534	4.7135	4.5737	4.4513	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	2.9906
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.3255
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0385	3.6046
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3435	3.8372
9	8.5660	8.1522	7.7851	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.0310
10	9.4713	8.9826	8.5302	8.1103	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.1925
11	10.3676	9.7868	9.3526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337	5.0285	4.3271
12	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4824	6.1944	5.9176	5.6603	5.4206	5.1971	4.4392
13	12.1337	11.3484	10.6350	9.9855	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218	5.8424	5.5831	5.3423	4.5327
14	13.0037	12.1062	11.2951	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245	5.4675	4.6106
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6051	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	4.6755
16	14.7179	13.5777	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542	5.6685	4.7296
17	15.5623	14.2919	13.1651	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291	6.3729	6.0472	5.7487	4.7746
18	16.3983	14.9920	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8173	4.8122
19	17.2260	15.6785	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501	8.3649	7.8393	7.3658	6.9380	6.5504	6.1982	5.8775	4.8435
20	18.0456	16.3514	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9283	4.8696
21	18.8570	17.0112	15.4150	14.0292	12.8212	11.7641	10.8355	10.0168	9.2922	8.6487	8.0751	7.5620	7.1016	6.6870	6.3125	5.9731	4.8913
22	19.6604	17.6580	15.9359	14.4511	13.1630	12.0416	11.0612	10.2007	9.4424	8.7715	8.1757	7.6446	7.1695	6.7429	6.3587	6.0113	4.9094
23	20.4558	18.2922	16.4436	14.8563	13.4886	12.3034	11.2722	10.3711	9.5802	8.8832	8.2664	7.7184	7.2297	6.7921	6.3988	6.0442	4.9245
24	21.2434	18.9139	16.9355	15.2470	13.7986	12.5504	11.4693	10.5288	9.7066	8.9847	8.3481	7.7843	7.2829	6.8351	6.4336	6.0725	4.9371
25	22.0232	19.5235	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.8226	9.0770	8.4217	7.8431	7.3300	6.8729	6.4641	6.0971	4.9476