



ATD LEVEL II

FUNDAMENTALS OF FINANCE

TUESDAY: 27 November 2018.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question. Show ALL your workings.

QUESTION ONE

- (a) Differentiate between “primary market” and “secondary market”. (4 marks)
- (b) In relation to Islamic finance, explain four sources of finance. (8 marks)
- (c) A businessman wants to save for the university education of his son. The businessman estimates that the education expenses will be Sh.1 million per year for four years when his son joins university in 16 years time. The expenses will be payable at the beginning of the years. He expects the annual interest rate of 8% over the next two decades. (Assume that the deposit is made at the end of the year).

Required:

Calculate the amount of money that he should deposit in the bank each year for the next 15 years to take care of his son’s university education expenses. (4 marks)

- (d) Baldwin Ronny borrowed Sh.5 million from a bank at the rate of 15% per annum. The loan is to be repaid in equal instalments at the end of each year for the next three years. Interest on the loan is to be paid on a reducing balance basis.

Required:

Prepare a loan amortisation schedule. (4 marks)
(Total: 20 marks)

QUESTION TWO

- (a) Outline two reasons for the time preference for money. (2 marks)
- (b) Explain four factors to be considered while formulating the dividend policy. (8 marks)
- (c) The following is an extract from the statement of financial position of EPSY Ltd. as at 30 June 2018:

	Sh. “000”
Ordinary shares of Sh.50 each	5,200
Reserves	4,850
9% preference shares of Sh.100 each	4,500
14% loan notes	<u>5,000</u>
Total long-term funds	<u>19,550</u>

Additional information:

- The ordinary shares are quoted at Sh.80 per share. Ordinary shareholders expect cash dividend of Sh.4 per share and a dividend growth at the rate of 12% at the end of every year.
- The preference shares which are unredeemable are quoted at Sh.72 per share.
- The loan notes are quoted at par.
- The corporate rate of tax is 33% per annum.

Required:

The weighted average cost of capital using market value. (10 marks)
(Total: 20 marks)

QUESTION THREE

(a) Explain three reasons for the regulation of financial markets in your country. (6 marks)

(b) The following is an extract from the financial statements of Takuy Ltd. for the year ended 31 December 2016 and 2017:

	Year 2017	
	Sh. "Million"	
Sales	80	
Cost of sales	56	

	Year 2016	Year 2017
	Sh. "Million"	Sh. "Million"
Inventory	9	12
Accounts receivable	12	16
Accounts payable	7	10

The financial year for Takuy Ltd. has 365 days.

Required:

Calculate the following:

(i) Operating cycle. (4 marks)

(ii) Cash operating cycle. (2 marks)

(c) Jimia Brothers have provided the following information regarding their business:

1. The estimated sales are Sh.50,000 in December 2018, Sh.55,000 in January 2019 and Sh.60,000 in February 2019. All sales will be in cash.
2. Their estimated purchases are Sh.20,000 in December 2018, Sh.22,000 in January 2019 and Sh.25,000 in February 2019. The payments for the purchases will be made after a lag of one month. Outstanding on the account of purchases in November 2018 is Sh.22,000.
3. The rent per month is Sh.5,000.
4. Salaries and other expenses, payable in cash are expected to be Sh.15,000 in December 2018, Sh.18,000 in January 2019 and Sh.20,000 in February 2019.
5. They expect to buy furniture worth Sh.25,000 on cash payment in January 2019.
6. The cash balance at present is Sh.5,000. Their target cash balance, however is Sh.8,000.

Required:

Prepare a statement showing the surplus or deficit in relation to the minimum cash balance required. (8 marks)

(Total: 20 marks)

QUESTION FOUR

(a) Distinguish between "internal sources of finance" and "external sources of finance", giving an example in each case. (4 marks)

(b) Outline four advantages of retained earnings as a source of finance. (4 marks)

(c) Mahdady Ltd. are evaluating two mutually exclusive projects, x and y.

The details of the projects are given as follows:

Project x:

The cost of project is Sh.2,000,000. It is expected to generate an annual net cash inflow of Sh.250,000 each year to perpetuity.

Project y:

This project will cost Sh.1,500,000. It is expected to have a useful life of 3 years with a scrap value of Sh.300,000 after 3 years.

This investment will require an initial investment of working capital of Sh.200,000 at the start (Year 0) which will however be recovered at the end of the asset's useful life.

The estimated pre-tax cash flow from this project excluding provision for depreciation in each year are given as follows:

Year:	1	2	3
	Sh."000"	Sh."000"	Sh."000"
Pre-tax cash flow	1,200	1,400	1,300

Additional information:

1. The firm provides for depreciation on a straight line basis.
2. Cost of capital is 10% and the corporation tax rate applicable is 30%.

Required:

- (i) Net present value (NPV) for project x and y. (10 marks)
 - (ii) Advise the company on which project to undertake. (2 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) State four causes of agency conflict between shareholders and independent auditors. (4 marks)
- (b) Citing three reasons, explain why firms should focus on value maximisation as their main objective instead of profit maximisation. (6 marks)
- (c) Harold Mutiso bought shares of ABC Ltd. at a price of Sh.40 each. The forecasted market price for each share and dividend payable on each share in each year over the next three years from now are given as follows:

Year	Market price per share (MPS) Sh.	Dividend per share (DPS) Sh.
1	42	2
2	44	2.5
3	45	3.5

Required:

- (i) Expected rate of return from the shares. (4 marks)
 - (ii) Standard deviation of return. (4 marks)
 - (iii) Coefficient of variation. (2 marks)
- (Total: 20 marks)**
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Present Value of 1 Received at the End of n Periods:

$$PVIF_{r,n} = 1/(1+r)^n = (1+r)^{-n}$$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091	.8929	.8772	.8696	.8621	.8475	.8333	.8065	.7813	.7576	.7353
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264	.7972	.7695	.7561	.7432	.7182	.6944	.6504	.6104	.5739	.5407
3	.9706	.9423	.9151	.8890	.8638	.8396	.8163	.7938	.7722	.7513	.7118	.6750	.6575	.6407	.6086	.5787	.5245	.4768	.4348	.3975
4	.9610	.9238	.8885	.8548	.8227	.7921	.7629	.7350	.7084	.6830	.6355	.5921	.5718	.5523	.5158	.4823	.4230	.3725	.3294	.2923
5	.9515	.9057	.8626	.8219	.7835	.7473	.7130	.6806	.6499	.6209	.5674	.5194	.4972	.4761	.4371	.4019	.3411	.2910	.2495	.2149
6	.9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963	.5645	.5066	.4556	.4323	.4104	.3704	.3349	.2751	.2274	.1890	.1580
7	.9327	.8706	.8131	.7599	.7107	.6651	.6227	.5835	.5470	.5132	.4523	.3996	.3759	.3538	.3139	.2791	.2218	.1776	.1432	.1162
8	.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019	.4665	.4039	.3506	.3269	.3050	.2660	.2326	.1789	.1388	.1085	.0854
9	.9143	.8368	.7664	.7026	.6446	.5919	.5439	.5002	.4604	.4241	.3606	.3075	.2843	.2630	.2255	.1938	.1443	.1084	.0822	.0628
10	.9053	.8203	.7441	.6756	.6139	.5584	.5083	.4632	.4224	.3855	.3220	.2697	.2472	.2267	.1911	.1615	.1164	.0847	.0623	.0462
11	.8963	.8043	.7224	.6496	.5847	.5268	.4751	.4289	.3875	.3505	.2875	.2366	.2149	.1954	.1619	.1346	.0938	.0662	.0472	.0340
12	.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555	.3186	.2567	.2076	.1869	.1685	.1372	.1122	.0757	.0517	.0357	.0250
13	.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3262	.2897	.2292	.1821	.1625	.1452	.1163	.0935	.0610	.0404	.0271	.0184
14	.8700	.7579	.6611	.5775	.5051	.4423	.3878	.3405	.2992	.2633	.2046	.1597	.1413	.1252	.0985	.0779	.0492	.0316	.0205	.0135
15	.8613	.7430	.6419	.5553	.4810	.4173	.3624	.3152	.2745	.2394	.1827	.1401	.1229	.1079	.0835	.0649	.0397	.0247	.0155	.0099
16	.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519	.2176	.1631	.1229	.1069	.0930	.0708	.0541	.0320	.0219	.0118	.0073
17	.8444	.7142	.6050	.5134	.4363	.3714	.3166	.2703	.2311	.1978	.1456	.1078	.0929	.0802	.0600	.0451	.0258	.0150	.0089	.0054
18	.8360	.7002	.5874	.4936	.4155	.3503	.2959	.2502	.2120	.1799	.1300	.0946	.0808	.0691	.0508	.0376	.0208	.0118	.0068	.0039
19	.8277	.6864	.5703	.4746	.3957	.3305	.2765	.2317	.1945	.1635	.1161	.0829	.0703	.0596	.0431	.0313	.0168	.0092	.0051	.0029
20	.8195	.6730	.5537	.4564	.3769	.3118	.2584	.2145	.1784	.1486	.1037	.0728	.0611	.0514	.0365	.0261	.0135	.0072	.0039	.0021
25	.7798	.6095	.4776	.3751	.2953	.2330	.1842	.1460	.1160	.0923	.0588	.0378	.0304	.0245	.0160	.0105	.0046	.0021	.0010	.0005
30	.7419	.5521	.4120	.3083	.2314	.1741	.1314	.0994	.0754	.0573	.0334	.0196	.0151	.0116	.0070	.0042	.0016	.0006	.0002	.0001
40	.6717	.4529	.3066	.2083	.1420	.0972	.0668	.0460	.0318	.0221	.0107	.0053	.0037	.0026	.0013	.0007	.0002	.0001		
50	.6080	.3715	.2281	.1407	.0872	.0543	.0339	.0213	.0134	.0085	.0035	.0014	.0009	.0006	.0003	.0001				
60	.5504	.3048	.1697	.0951	.0535	.0303	.0173	.0099	.0057	.0033	.0011	.0004	.0002	.0001						

* The factor is zero to four decimal places

Present Value of an Annuity of 1 Per Period for n Periods:

$$PVIF_{r,n} = \sum_{t=1}^n \frac{1}{(1+r)^t} = \frac{1 - \frac{1}{(1+r)^n}}{r}$$

NUMBER OF PAYMENTS	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.8929	0.8772	0.8696	0.8621	0.8475	0.8333	0.8065	0.7813	0.7576
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.6901	1.6467	1.6257	1.6052	1.5656	1.5278	1.4568	1.3916	1.3315
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4018	2.3216	2.2832	2.2459	2.1743	2.1065	1.9813	1.8684	1.7663
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.0373	2.9137	2.8550	2.7982	2.6901	2.5887	2.4043	2.2410	2.0957
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6048	3.4331	3.3522	3.2743	3.1272	2.9906	2.7454	2.5320	2.3452
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.1114	3.8887	3.7845	3.6847	3.4976	3.3255	3.0205	2.7594	2.5342
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.5638	4.2883	4.1604	4.0386	3.8115	3.6046	3.2423	2.9370	2.6775
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5349	5.3349	4.9676	4.6389	4.4873	4.3436	4.0776	3.8372	3.4212	3.0758	2.7860
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.3282	4.9464	4.7716	4.6065	4.3030	4.0310	3.5655	3.1842	2.8681
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.6502	5.2161	5.0188	4.8332	4.4941	4.1925	3.6819	3.2689	2.9304
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	5.9377	5.4527	5.2337	5.0286	4.6560	4.3271	3.7757	3.3351	2.9776
12	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.1944	5.6603	5.4206	5.1971	4.7932	4.4392	3.8514	3.3868	3.0133
13	12.1337	11.3484	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.4235	5.8424	5.5831	5.3423	4.9095	4.5327	3.9124	3.4272	3.0404
14	13.0037	12.1062	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.6282	6.0021	5.7245	5.4675	5.0081	4.6106	3.9616	3.4587	3.0609
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6061	6.8109	6.1422	5.8474	5.5755	5.0916	4.6755	4.0013	3.4834	3.0764
16	14.7179	13.5777	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126	7.8237	6.9740	6.2651	5.9542	5.6685	5.1624	4.7296	4.0333	3.5026	3.0882
17	15.5623	14.2919	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436	8.0216	7.1196	6.3729	6.0472	5.7487	5.2223	4.7746	4.0591	3.5177	3.0971
18	16.3983	14.9920	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556	8.2014	7.2497	6.4674	6.1280	5.8178	5.2732	4.8122	4.0799	3.5294	3.1039
19	17.2260	15.6785	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501	8.3649	7.3658	6.5504	6.1982	5.8775	5.3162	4.8435	4.0967	3.5386	3.1090
20	18.0456	16.3514	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	9.1285	8.5136	7.4694	6.6231	6.2593	5.9288	5.3527	4.8696	4.1103	3.5458	3.1129
25	22.0232	19.5235	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.8226	9.0770	7.8431	6.8729	6.4641	6.0971	5.4669	4.9476	4.1474	3.5640	3.1220
30	25.8077	22.3965	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	10.2737	9.4269	8.0552	7.0027	6.5660	6.1772	5.5168	4.9789	4.1601	3.5693	3.1242
40	32.8347	27.3555	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	10.7574	9.7791	8.2438	7.1050	6.6418	6.2335	5.5482	4.9966	4.1659	3.5712	3.1250
50	39.1961	31.4236	25.7298	21.4822	18.2559	15.7619	13.8007	12.2335	10.9617	9.9148	8.3045	7.1327	6.6605	6.2463	5.5541	4.9995	4.1666	3.5714	3.1250
60	44.9550	34.7609	27.6756	22.6235	18.9293	16.1614	14.0392	12.3766	11.0480	9.9672	8.3240	7.1401	6.6651	6.2402	5.5553	4.9999	4.1667	3.5714	3.1250

Future Value Factor for an Ordinary Annuity

(Interest rate = r , Number of periods = n)

$n \setminus r$	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	2.0100	2.0200	2.0300	2.0400	2.0500	2.0600	2.0700	2.0800	2.0900	2.1000	2.1100	2.1200	2.1300	2.1400	2.1500	2.1600	2.1700
3	3.0301	3.0604	3.0909	3.1216	3.1525	3.1836	3.2149	3.2464	3.2781	3.3100	3.3421	3.3744	3.4069	3.4396	3.4725	3.5056	3.5389
4	4.0604	4.1216	4.1836	4.2465	4.3101	4.3746	4.4399	4.5061	4.5731	4.6410	4.7097	4.7793	4.8498	4.9211	4.9934	5.0665	5.1405
5	5.1010	5.2040	5.3091	5.4163	5.5256	5.6371	5.7507	5.8665	5.9847	6.1051	6.2278	6.3528	6.4803	6.6101	6.7424	6.8771	7.0144
6	6.1520	6.3081	6.4684	6.6330	6.8019	6.9753	7.1533	7.3359	7.5233	7.7156	7.9129	8.1152	8.3227	8.5355	8.7537	8.9771	9.2068
7	7.2135	7.4343	7.6625	7.8983	8.1420	8.3938	8.6540	8.9228	9.2004	9.4872	9.7833	10.0890	10.4047	10.7305	11.0668	11.4139	11.7720
8	8.2857	8.5830	8.8923	9.2142	9.5491	9.8975	10.2598	10.6366	11.0285	11.4359	11.8594	12.2997	12.7573	13.2328	13.7268	14.2401	14.7733
9	9.3685	9.7546	10.1591	10.5828	11.0266	11.4913	11.9780	12.4876	13.0210	13.5795	14.1640	14.7757	15.4157	16.0853	16.7858	17.5185	18.2847
10	10.4622	10.9497	11.4639	12.0061	12.5779	13.1808	13.8164	14.4866	15.1929	15.9374	16.7220	17.5487	18.4197	19.3373	20.3037	21.3215	22.3931
11	11.5668	12.1687	12.8078	13.4864	14.2068	14.9716	15.7836	16.6455	17.5603	18.5312	19.5614	20.6546	21.8143	23.0445	24.3493	25.7329	27.1999
12	12.6825	13.4121	14.1920	15.0258	15.9171	16.8699	17.8885	18.9771	20.1407	21.3843	22.7132	24.1331	25.6502	27.2707	29.0017	30.8502	32.8239
13	13.8093	14.6803	15.6178	16.6268	17.7130	18.8821	20.1406	21.4953	22.9534	24.5227	26.2116	28.0291	29.9847	32.0887	34.3519	36.7862	39.4040
14	14.9474	15.9739	17.0663	18.2919	19.5986	21.0151	22.5505	24.2149	26.0192	27.9750	30.0949	32.3926	34.8827	37.5811	40.5047	43.6720	47.1027
15	16.0969	17.2934	18.5989	20.0236	21.5788	23.2760	25.1290	27.1521	29.3609	31.7725	34.4054	37.2797	40.4175	43.8424	47.5804	51.6595	56.1101
16	17.2579	18.6393	20.1569	21.8245	23.6575	25.6725	27.8881	30.3243	33.0034	35.9497	39.1899	42.7533	46.6717	50.9804	55.7175	60.9250	66.6488
17	18.4304	20.0121	21.7616	23.6975	25.8404	28.2129	30.8402	33.7502	36.9737	40.5447	44.5008	48.8837	53.7391	59.1176	65.0751	71.6730	78.9792
18	19.6147	21.4123	23.4144	25.6454	28.1324	30.9057	33.9990	37.4502	41.3013	45.5992	50.3959	55.7497	61.7251	68.3941	75.8364	84.1407	93.4056
19	20.8109	22.8406	25.1169	27.6712	30.5390	33.7600	37.3790	41.4463	46.0185	51.1591	56.9395	63.4397	70.7494	78.9692	88.2118	98.6032	110.2846
20	22.0190	24.2974	26.8704	29.7781	33.0660	36.7856	40.9955	45.7620	51.1601	57.2750	64.2028	72.0524	80.9468	91.0249	102.4436	115.3797	130.0329
21	23.2392	25.7833	28.6765	31.9692	35.7193	39.9927	44.8652	50.4229	56.7645	64.0025	72.2651	81.5926	92.1243	92.5026	105.4910	120.4360	137.6316
22	24.4716	27.2990	30.5368	34.2480	38.5026	43.3923	49.0057	55.4566	62.8733	71.4027	81.2143	92.5026	105.4910	120.4360	137.6316	157.4150	180.1721
23	25.7163	28.8450	32.4529	36.6179	41.4305	46.9958	53.4361	60.8933	69.5300	79.5430	91.1479	104.6029	120.2048	138.2970	159.2764	183.6014	211.8013
24	26.9735	30.4219	34.4265	39.0826	44.5020	50.8156	58.1767	66.7648	76.7898	88.4973	102.1742	118.1552	136.8315	158.6586	184.1678	213.9776	248.8076
25	28.2432	32.0303	36.4593	41.6459	47.7271	54.8645	63.2490	73.1059	84.7009	98.9471	114.4133	133.3339	155.6196	181.8708	212.7930	249.2140	292.1049
26	29.5256	33.6709	38.5520	44.3117	51.1135	59.1564	68.6765	79.9544	93.3240	109.1818	127.9988	150.3339	176.8501	208.3327	245.7120	290.0883	342.7627
27	30.8209	35.3443	40.7096	47.0842	54.6691	63.7058	74.4838	87.3508	102.7282	121.0999	143.0786	169.3740	200.8406	238.4993	283.5688	337.5024	402.0323
28	32.1291	37.0512	42.9309	49.9676	58.4026	68.5281	80.6977	95.3388	112.9688	134.2099	159.8173	190.6989	227.9499	272.8892	327.1041	392.5028	471.3778
29	33.4504	38.7922	45.2189	52.9663	62.3227	73.6398	87.3465	103.9659	124.1354	148.6309	178.3972	214.5828	258.5834	312.0937	377.1697	456.3032	552.5121
30	34.7849	40.5681	47.5754	56.0849	66.4388	79.0582	94.4608	113.2832	136.3075	164.4940	199.0209	241.3327	293.1992	356.7868	434.7451	530.3117	647.4391
31	36.1327	42.3794	50.0027	59.3283	70.7608	84.8017	102.0730	123.3459	149.5752	181.9434	221.9132	271.2926	332.3151	407.7370	500.9569	616.1616	758.5038
32	37.4941	44.2270	52.5028	62.7015	75.2988	90.8898	110.2182	134.2135	164.0370	201.1378	247.3236	304.8477	376.5161	465.8202	577.1005	715.7475	888.4494
33	38.8690	46.1116	55.0778	66.2095	80.0638	97.3432	118.9334	145.9506	179.8003	222.2515	275.5292	342.4294	426.4632	532.0350	664.6655	831.2671	1040.486
34	40.2577	48.0338	57.7302	69.8579	85.0670	104.1838	128.2588	158.6267	196.9823	245.4767	306.8374	384.5210	482.9034	607.5199	765.3654	965.2688	1218.368
35	41.6603	49.9945	60.4621	73.6522	90.3203	111.4348	138.2369	172.3168	215.7108	271.0244	341.5896	431.6635	546.8808	693.6727	881.1702	1120.713	1426.491
36	43.0769	51.9944	63.2759	77.5983	95.8363	119.1209	148.9135	187.1021	236.1247	299.1268	380.1644	484.4631	618.7493	791.6729	1014.346	1301.027	1669.994
37	44.5076	54.0343	66.1742	81.7022	101.6281	127.2681	160.3374	203.0703	258.3759	330.0595	422.9825	543.5987	700.1867	903.5071	1167.498	1510.191	1954.894
38	45.9527	56.1149	69.1594	85.9703	107.7095	135.9042	172.5610	220.3159	282.6298	364.0434	470.5106	609.8305	792.2110	1030.998	1343.622	1752.822	2288.225
39	47.4123	58.2372	72.2342	90.4091	114.0950	145.0585	185.6403	238.9412	309.0665	401.4478	523.2667	684.0102	896.1984	1176.338	1546.165	2034.273	2678.224
40	48.8864	60.4020	75.4013	95.0255	120.7998	154.7620	199.6351	259.0565	337.8824	442.5926	581.8251	767.0914	1013.704	1342.025	1779.090	2360.757	3134.522
41	50.3752	62.6100	78.6633	99.8265	127.8398	165.0477	214.6096	280.7810	369.2919	487.8518	646.8269	860.1424	1146.486	1530.909	2046.954	2739.478	3668.391
42	51.8790	64.8622	82.0232	104.8196	135.2318	175.9505	230.6322	304.2435	403.5321	537.6310	719.9779	964.3595	1296.529	1746.236	2354.946	3178.795	4293.017
43	53.3978	67.1595	85.4839	110.0124	142.9933	187.5076	247.7765	329.5830	440.8457	592.4007	799.0657	1081.083	1466.078	1991.709	2709.297	3688.402	5023.830
44	54.9318	69.5027	89.0484	115.4129	151.1430	199.7580	266.1209	356.9496	481.5218	652.6408	887.9627	1211.813	1657.668	2271.548	3116.633	4279.633	5878.881
45	56.4811	71.8927	92.7199	121.0294	159.7002	212.7435	285.7493	386.5056	525.8587	718.9048	986.6386	1358.230	1874.165	2590.565	3585.128	4965.274	6879.291