

SULIT



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK
KEMENTERIAN PENDIDIKAN TINGGI**

JABATAN PERDAGANGAN

PEPERIKSAAN AKHIR

SESI DISEMBER 2017

DPB2033 : BUSINESS MATHEMATICS

TARIKH : 09 APRIL 2018

MASA : 8.30 PAGI - 10.30 PAGI (2 JAM)

Kertas ini mengandungi **TUJUH (7)** halaman bercetak.

Struktur (4 soalan)

Dokumen sokongan yang disertakan : Formula, Jadual PVIF & PVIFA

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

INSTRUCTION:

This section consists of **FOUR (4)** structured questions. Answer **ALL** questions.

ARAHAN:

Bahagian ini mengandungi **EMPAT (4)** soalan struktur. Jawab **SEMUA** soalan.

QUESTION 1

SOALAN 1

CLO1
C1

a) Differentiate the following:

Bezakan yang berikut :

i. $y = \sqrt{x}$

[5 marks]

[5 markah]

ii. $y = \frac{2x-2}{3x+1}$

[5 marks]

[5 markah]

iii. $y = x^2(2x+8)$

[5 marks]

[5 markah]

CLO1
C2

b) The demand equation of a travel agency company is $p = 40 - 2q$ and its function for

average cost is given by $\bar{C}(q) = 4 + \frac{100}{q}$. Determine:

Persamaan permintaan sebuah syarikat agensi perlancongan adalah $p = 40 - 2q$ dan

fungsi purata kos diberi adalah $\bar{C}(q) = 4 + \frac{100}{q}$. Tentukan:

i. The total revenue function, $R(q)$.

Fungsi Jumlah Hasil, $R(q)$.

[2 marks]

[2 markah]

ii. The total cost function, $C(q)$.

Fungsi Jumlah Kos, $C(q)$.

[2 marks]

[2 markah]

iii. The total profit function, $P(q)$.

Fungsi Jumlah Untung, $P(q)$.

[2 marks]

[2 markah]

iv. The price which will maximize the profit.

Harga yang akan maksimumkan keuntungan.

[4 marks]

[4 markah]

QUESTION 2

SOALAN 2

Twin Construction plans to invest in a project that will increase the company's profit. At the end of the meeting, two projects were listed. Discount rate for both projects is 10%. The estimated cash flow for each machine is given as follows:

Twin Construction merancang untuk melabur di dalam satu projek yang dijangka mampu menambah keuntungan syarikat. Kadar faedah untuk kedua-dua projek ialah 10%. Jangkaan aliran tunai untuk setiap mesin adalah seperti berikut :

Year <i>Tahun</i>	<i>PROJECT A</i> <i>PROJEK B</i>		<i>PROJECT B</i> <i>PROJEK B</i>	
	<i>Annual Cash Flow</i> <i>Aliran Tunai Tahunan</i>	<i>Accumulated Cash Flow</i> <i>Aliran Tunai Terkumpul</i>	<i>Annual Cash Flow</i> <i>Aliran Tunai Tahunan</i>	<i>Accumulated Cash Flow</i> <i>Aliran Tunai Terkumpul</i>
0	(126,000)	-	(140,000)	-
1	30,000	30,000	30,000	30,000
2	30,000	60,000	30,000	60,000
3	30,000	90,000	28,000	88,000
4	30,000	120,000	35,000	123,000
5	30,000	150,000	45,000	168,000

CLO1
C2

a) Calculate for each projects:

Kirakan :

i. Payback period for both projects

Tempoh bayaran balik untuk kedua-dua projek

[5 marks]

[5 markah]

ii. Net Present Value

Nilai Kini Bersih

[10 marks]

[10 markah]

CLO1
C3

- b) i. Calculate Average Rate of Return

Kirakan Kadar Pulangan Purata

[8 marks]

[8 markah]

- ii. Choose and give reason for the best project based on the average rate of return method.

Pilih projek terbaik berdasarkan kadar pulangan purata dan nyatakan alasan anda.

[2 marks]

[2 markah]

QUESTION 3**SOALAN 3**CLO2
C2

Azra Ariana bought a sewing machine at RM8000 through an instalment plan. She paid RM1000 as the down payment. The balance would be settled within ten months instalments. If the interest rate for the instalment balance is 8.5% per annum, find:

Azra Ariana membeli sebuah mesin jahit pada harga RM8 000 melalui pelan ansuran. Beliau telah membayar RM1 000 sebagai bayaran pendahuluan. Bakinya akan diselesaikan dalam tempoh sepuluh bulan ansuran. Jika kadar faedah untuk baki ansuran ialah 8.5 % setahun, carikan:

- a) Compute :
-
- Kirakan :

- i. The total interest charged
-
- Jumlah Kadar Faedah*

[5 marks]

[5 markah]

- ii. Monthly Payment
-
- Bayaran Bulanan*

[5 marks]

[5 markah]

CLO2
C3

- b) Determine the outstanding balance if she wished to settle all her debts after the third payments.

Tentukan baki tertunggak jika beliau ingin menyelesaikan semua hutang selepas bayaran ketiga.

[10 marks]

[10 markah]

CLO2
C3

- c) Calculate the amount of an investment after one year if RM100 was invested and the interest rate was 9.04% compounded annually.

Kirakan jumlah pelaburan selepas setahun sekiranya RM100 dilaburkan dan kadar faedah adalah 9.04% kompaun setiap tahun.

[5 marks]

[5 markah]

QUESTION 4**SOALAN 4**

Kilang Sejuk Afnan produces refrigerators in 3 different factories located in Kuala Lumpur, Kluang and Kuantan. The refrigerators are sent to four warehouses located in Ipoh, Kangar, Johor Bahru and Melaka. The quantities produced by the factories and demanded by the warehouses are as follows:

Kilang Sejuk Afnan menghasilkan peti sejuk di 3 lokasi kilang yang berbeza di Kuala Lumpur, Kluang dan Kuantan. Peti sejuk tersebut dihantar ke empat gudang yang terletak di Ipoh, Kangar, Johor Bahru dan Melaka. Kuantiti peti sejuk yang dikeluarkan oleh kilang-kilang dan yang diperlukan oleh gudang-gudang adalah seperti berikut :

Factory <i>Kilang</i>	Production of Refrigerator <i>Penghasilan Peti sejuk</i>
Kuala Lumpur	20
Kluang	60
Kuantan	70

Warehouse <i>Gudang</i>	Requirement of Refrigerator <i>Keperluan Peti sejuk</i>
Ipoh	30
Kangar	30
Johor Bahru	40
Melaka	50

The cost of transporting for each refrigerator from the factory to the warehouses as follows:

Kos penghantaran setiap peti sejuk dari kilang ke gudang adalah seperti yang berikut :

Warehouse <i>Gudang</i>	Transportation Cost (RM) <i>Kos penghantaran</i>			
	Ipoh	Kangar	Johor Bahru	Melaka
Factory <i>Kilang</i>				
Kuala Lumpur	13	11	15	20
Kluang	17	14	12	13
Kuantan	18	18	15	12

CLO2
C1

a) Provide a transportation table using the above information.

Sediakan jadual pengangkutan menggunakan maklumat di atas.

[5 marks]

[5 markah]

CLO2
C2

b) Calculate the transportation cost by using Minimum Cost Method.

Kirakan kos pengangkutan menggunakan Kaedah Kos Minimum.

[5 marks]

[5 markah]

CLO2
C3

c) Calculate the optimal transportation cost using the Stepping Stone Method.

Kirakan kos pengangkutan yang optimum menggunakan Kaedah Batu Loncatan.

[15 marks]

[15 markah]

FORMULA BUSINESS MATHEMATIC

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$P = pQ - VCQ - FC$$

$$P = TR - TC$$

$$TC = VCQ + FC$$

$$TR = pQ$$

$$TVC = VCQ$$

$$BEP(Q) = \frac{FC}{p - VC}$$

$$BEP(RM) = BEP(Q) \times p$$

$$CM = p - VC$$

$$CMR = \frac{p - VC}{p} \times 100$$

$$\frac{dy}{dx} = nx^{n-1}$$

$$\frac{dy}{dx} = nx^{n-1} + 0$$

$$\frac{dy}{dx} = anx^{n-1}$$

$$\frac{dy}{dx} = anx^{n-1} + bmx^{m-1}$$

$$\frac{dy}{dx} = u \frac{dv}{dx} + v \frac{du}{dx}$$

$$\frac{dy}{dx} = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$$

$$\frac{dy}{dx} = \frac{dy}{du} \times \frac{du}{dx}$$

$$I = Prt$$

$$I = IP - CP$$

$$I = \left(\frac{Pr + Yr}{2}\right)t \quad \text{or} \quad I = Pr\left(\frac{t+1}{2}\right)$$

$$Y = \frac{P}{t}$$

$$DP = \text{Rate (\%)} \times CP$$

$$P = CP - DP + \text{other payments}$$

$$S = P + I$$

$$S = P(1 + rt)$$

$$D = Sdt$$

$$H = S - D$$

$$MP = \frac{S}{n}$$

$$IP = DP + (MP \times n) @ DP + S @ DP + P + I$$

$$R = \frac{\sum n}{\sum N} \times I \quad \text{and} \quad \sum n = \left(\frac{n+1}{2}\right)n, \quad \sum N = \left(\frac{N+1}{2}\right)N$$

$$EP = (n \times MP) - R$$

$$S = P\left(1 + \frac{i}{m}\right)^{n.m}$$

$$P = \frac{S}{\left(1 + \frac{i}{m}\right)^{n.m}}$$

$$P = R \left(\frac{1 - \left(1 + \frac{i}{m}\right)^{-n.m}}{\frac{i}{m}} \right) \quad \text{and} \quad R = \frac{P \left(\frac{i}{m}\right)}{1 - \left(1 + \frac{i}{m}\right)^{-n.m}}$$

$$S = R \left(\frac{\left(1 + \frac{i}{m}\right)^{n.m} - 1}{\frac{i}{m}} \right) \quad \text{and} \quad R = \frac{S \left(\frac{i}{m}\right)}{\left(1 + \frac{i}{m}\right)^{n.m} - 1}$$

$$PP = \frac{IO}{ACF}$$

$$PP = T + \frac{IO - \sum ACF_T}{ACF_{T+1}}$$

$$ARR = \frac{\text{Average ACF} - \text{Dep.}}{IO} \times 100$$

$$NPV = ACF(PVIFA, k\%, n) - IO$$

$$PI = \frac{PV}{IO}$$

Present Value and Future Value Tables

Table A-3 Present value interest factors One-Dollar Discounted at k percent for n periods: $PVIF_{k,n} = 1/(1+k)^n$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	24%	25%	30%
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	0.8547	0.8475	0.8403	0.8333	0.8065	0.8000	0.7692
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	0.7305	0.7182	0.7062	0.6944	0.6504	0.6400	0.5917
3	0.9706	0.9423	0.9151	0.8890	0.8636	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.6244	0.6086	0.5934	0.5787	0.5245	0.5120	0.4552
4	0.9610	0.9228	0.8855	0.8488	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.5337	0.5158	0.4987	0.4823	0.4230	0.4096	0.3501
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	0.4561	0.4371	0.4190	0.4019	0.3411	0.3277	0.2693
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	0.3896	0.3704	0.3521	0.3349	0.2751	0.2621	0.2072
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	0.3332	0.3139	0.2959	0.2791	0.2218	0.2097	0.1594
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	0.2848	0.2660	0.2487	0.2326	0.1789	0.1678	0.1226
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	0.2434	0.2255	0.2090	0.1938	0.1443	0.1342	0.0943
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	0.2945	0.2697	0.2472	0.2267	0.2080	0.1911	0.1756	0.1615	0.1164	0.1074	0.0725
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	0.1778	0.1619	0.1476	0.1346	0.0938	0.0859	0.0558
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	0.1520	0.1372	0.1240	0.1122	0.0757	0.0687	0.0429
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2892	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.1299	0.1163	0.1042	0.0935	0.0610	0.0550	0.0330
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	0.1110	0.0985	0.0876	0.0779	0.0492	0.0440	0.0254
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	0.0949	0.0835	0.0736	0.0649	0.0387	0.0352	0.0195
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1863	0.1591	0.1415	0.1229	0.1069	0.0930	0.0811	0.0708	0.0618	0.0541	0.0320	0.0281	0.0150
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1698	0.1456	0.1252	0.1078	0.0929	0.0802	0.0693	0.0600	0.0520	0.0451	0.0258	0.0225	0.0116
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	0.0592	0.0508	0.0437	0.0376	0.0208	0.0180	0.0089
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	0.0506	0.0431	0.0367	0.0313	0.0168	0.0144	0.0068
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	0.0725	0.0611	0.0514	0.0433	0.0365	0.0308	0.0261	0.0135	0.0115	0.0053
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	0.0370	0.0309	0.0259	0.0217	0.0109	0.0092	0.0040
22	0.8034	0.6468	0.5219	0.4220	0.3419	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560	0.0462	0.0382	0.0316	0.0262	0.0218	0.0181	0.0088	0.0074	0.0031
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1376	0.1117	0.0907	0.0738	0.0601	0.0491	0.0402	0.0329	0.0270	0.0222	0.0183	0.0151	0.0071	0.0059	0.0024
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	0.0231	0.0188	0.0154	0.0126	0.0057	0.0047	0.0018
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0726	0.0588	0.0471	0.0378	0.0304	0.0245	0.0197	0.0160	0.0129	0.0105	0.0046	0.0038	0.0014
30	0.7479	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196	0.0151	0.0116	0.0090	0.0070	0.0054	0.0042	0.0016	0.0012	-
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189	0.0139	0.0102	0.0075	0.0055	0.0041	0.0030	0.0023	0.0017	0.0005	-	-
36	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0449	0.0323	0.0234	0.0169	0.0123	0.0089	0.0065	0.0048	0.0035	0.0025	0.0019	0.0014	-	-	-
40	0.6717	0.4529	0.3066	0.2093	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0026	0.0019	0.0015	0.0010	0.0007	-	-	-
50	0.6080	0.3715	0.2281	0.1407	0.0872	0.0543	0.0399	0.0273	0.0134	0.0085	0.0054	0.0035	0.0022	0.0014	0.0009	0.0006	0.0004	0.0003	0.0002	-	-	-	-

Present Value and Future Value Tables

Table A-4: Present value interest factors for a One-Dollar Annuity Discounted at k percent for n periods: $PVIFA = [1 - (1 + k)^{-n}] / k$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	24%	25%	30%
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	0.8547	0.8475	0.8403	0.8333	0.8065	0.8000	0.7692
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	1.5852	1.5656	1.5465	1.5278	1.4568	1.4400	1.3609
3	2.9410	2.8939	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	2.2096	2.1743	2.1399	2.1065	1.9813	1.9520	1.8161
4	3.9020	3.8077	3.7111	3.6239	3.5460	3.4651	3.3872	3.3121	3.2387	3.1669	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.7432	2.6901	2.6386	2.5887	2.4043	2.3615	2.1692
5	4.8534	4.7195	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	3.1983	3.1272	3.0576	2.9906	2.7454	2.6893	2.4356
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7655	4.6229	4.4859	4.3533	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.5892	3.4976	3.4098	3.3255	3.0205	2.9514	2.6427
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	4.0386	3.9224	3.8115	3.7057	3.6046	3.2423	3.1611	2.8021
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	4.6399	4.4873	4.3436	4.2072	4.0776	3.9544	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1622	7.7861	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	4.4506	4.3030	4.1633	4.0310	3.5655	3.4631	3.0190
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1448	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.6586	4.4941	4.3389	4.1925	3.6819	3.5705	3.0915
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6889	5.4527	5.2337	5.0286	4.8384	4.6560	4.4855	4.3271	3.7757	3.6564	3.1473
12	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5.1971	4.9884	4.7932	4.6105	4.4392	3.8514	3.7251	3.1903
13	12.1337	11.3484	10.6350	9.9656	9.3936	8.8627	8.3777	7.9308	7.4899	7.1034	6.7499	6.4235	6.1216	5.8424	5.5831	5.3423	5.1183	4.9095	4.7147	4.5327	3.9124	3.7801	3.2233
14	13.0037	12.1062	11.2961	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	5.2293	5.0081	4.8023	4.6106	3.9616	3.8241	3.2487
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	5.3242	5.0916	4.8759	4.6755	4.0013	3.8583	3.2682
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	5.4053	5.1624	4.9377	4.7296	4.0333	3.8874	3.2832
17	15.5623	14.2919	13.1661	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	5.4746	5.2223	4.9897	4.7746	4.0551	3.9059	3.2946
18	16.3983	14.9920	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7658	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	5.5339	5.2732	5.0333	4.8122	4.0799	3.9279	3.3037
19	17.2260	15.6785	14.3238	13.1339	12.0953	11.1991	10.3856	9.6036	8.9501	8.3649	7.8393	7.3653	6.9380	6.5504	6.1982	5.8776	5.5845	5.3162	5.0700	4.8495	4.0967	3.9424	3.3105
20	18.0456	16.3514	14.8775	13.5903	12.4622	11.4689	10.5940	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9288	5.6278	5.3527	5.1009	4.8696	4.1103	3.9599	3.3158
21	18.8570	17.0112	15.4150	14.0292	12.8212	11.7641	10.8955	10.0168	9.2922	8.6487	8.0751	7.5520	7.1016	6.6870	6.3125	5.9731	5.6648	5.3857	5.1268	4.8913	4.1212	3.9631	3.3198
22	19.6604	17.6580	15.9369	14.4511	13.1630	12.0416	11.0612	10.2007	9.4424	8.7715	8.1757	7.6446	7.1685	6.7429	6.3587	6.0113	5.6964	5.4089	5.1486	4.9094	4.1300	3.9705	3.3230
23	20.4558	18.2922	16.4436	14.8568	13.4886	12.3094	11.2722	10.3711	9.5802	8.8832	8.2664	7.7184	7.2297	6.7921	6.3988	6.0442	5.7234	5.4321	5.1668	4.9245	4.1371	3.9764	3.3254
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	6.4338	6.0726	5.7465	5.4509	5.1822	4.9371	4.1428	3.9811	3.3272
25	22.0232	19.5235	17.4131	15.6221	14.0938	12.7834	11.6536	10.6748	9.8226	9.0770	8.4217	7.8431	7.3300	6.8729	6.4641	6.0971	5.7662	5.4669	5.1951	4.9476	4.1474	3.9849	3.3286
30	25.8077	22.3665	19.6004	17.2920	15.3725	13.7648	12.4080	11.2678	10.2737	9.4269	8.6938	8.0552	7.4957	7.0027	6.5660	6.1772	5.8294	5.5168	5.2347	4.9789	4.1601	3.9950	3.3521
35	29.4086	24.9386	21.4872	18.6646	16.3742	14.4982	12.9477	11.6546	10.5668	9.6442	8.8552	8.1755	7.5856	7.0700	6.6166	6.2153	5.8562	5.5366	5.2512	4.9915	4.1644	3.9984	3.3630
36	30.1075	25.4988	21.8323	18.9083	16.5469	14.6210	13.0352	11.7172	10.6118	9.6785	8.8766	8.1924	7.6079	7.0790	6.6231	6.2201	5.8617	5.5412	5.2591	4.9929	4.1649	3.9987	3.3631
40	32.6347	27.3555	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	10.7974	9.7791	8.9511	8.2438	7.6344	7.1050	6.6418	6.2335	5.8713	5.5482	5.2682	4.9966	4.1659	3.9995	3.3632
50	35.1951	31.4236	25.7298	21.4922	18.2559	15.7619	13.8007	12.2335	10.9617	9.9148	9.0417	8.3045	7.6782	7.1327	6.6605	6.2483	5.8801	5.5541	5.2623	4.9995	4.1656	3.9999	3.3633