

SULIT



**KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI**

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

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR

SESI II : 2024/2025

BCF60213: INTRODUCTION TO VALUE MANAGEMENT

TARIKH : 17 JUN 2025 (SELASA)

MASA : 9.00 PAGI – 12.00 TGH (3 JAM)

Kertas ini mengandungi **ENAM (6)** halaman bercetak.

Struktur (4 soalan)

Dokumen sokongan yang disertakan : Present Value and Future Value Table

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

INSTRUCTION:

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

ARAHAN:

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

QUESTION 1**SOALAN 1**

CLO1

- (a) Value Management (VM) is a structured and systematic approach used to improve the value of a project, product, or process. Explain **FIVE (5)** benefits of applying Value Management (VM) in a project.

*Pengurusan Nilai (VM) ialah pendekatan berstruktur dan sistematik yang digunakan untuk meningkatkan nilai projek, produk atau proses. Terangkan **LIMA (5)** faedah menerapkan Pengurusan Nilai (VM) dalam projek*

[10 marks]

[10 markah]

CLO1

- (b) Based on your answer in question 1(a), correlate each of the **FIVE (5)** benefits of applying Value Management (VM) in a project with a specific example.

*Berdasarkan jawapan anda dalam soalan 1(a), hubungkaitkan setiap **LIMA (5)** faedah menggunakan Pengurusan Nilai (VM) dalam projek dengan contoh khusus.*

[15 marks]

[15 markah]

QUESTION 2**SOALAN 2**

CLO1

- (a) You are a facility manager attending a Value Management (VM) workshop for an upcoming hospital renovation project. To ensure effective discussions and decision-making, you need to prioritize **FIVE (5)** key documents that will support the workshop process. Prioritize the importance of the documents in the workshop.
- Anda adalah pengurus fasiliti yang menghadiri bengkel Pengurusan Nilai (VM) untuk projek pengubahsuaian hospital yang akan datang. Untuk memastikan perbincangan dan membuat keputusan yang berkesan, anda perlu mengutamakan **LIMA (5)** dokumen utama yang akan menyokong proses bengkel. Utamakan kepentingan dokumen dalam bengkel.*

[10 marks]

[10 markah]

CLO1

- (b) The Value Management (VM) job plan consists of structured phases designed to improve project efficiency and cost-effectiveness. Explain **FIVE (5)** key phases of the VM job plan.
- Pelan kerja Pengurusan Nilai (VM) terdiri daripada fasa berstruktur yang direka untuk meningkatkan kecekapan projek dan keberkesanan kos. Terangkan **LIMA (5)** fasa utama rancangan kerja VM.*

[15 marks]

[15 markah]

QUESTION 3**SOALAN 3**

CLO1

- (a) A government agency has proposed the construction of a new school in an urban area to accommodate the increasing number of students. A Value Management (VM) team has been formed to ensure the project delivers the best value while meeting functional and budgetary requirements. As a key member of the team, explain the roles and responsibilities of the following members in ensuring the successful completion of the school construction project:

Sebuah agensi kerajaan telah mencadangkan pembinaan sekolah baharu di kawasan bandar bagi menampung bilangan pelajar yang semakin bertambah. Pasukan Pengurusan Nilai (VM) telah dibentuk untuk memastikan projek memberikan nilai terbaik sambil memenuhi keperluan fungsian dan belanjawan. Sebagai ahli utama pasukan, terangkan peranan dan tanggungjawab ahli berikut dalam memastikan kejayaan menyiapkan projek pembinaan sekolah:

- i. Value Manager / *Pengurus Nilai*
- ii. Facility Manager / *Pengurus Fasiliti*
- iii. Local Authorities / *Pihak berkuasa*
- iv. Specialist / *Pakar*
- v. Design Team / *Pasukan reka bentuk*

[10 marks]

[10 markah]

CLO2

- (b) A project team is tasked with designing a sustainable school facility. As part of the value management study, the team decided to use the Function Analysis System Technique (FAST) Diagram to improve project efficiency. Consider **FOUR (4)** key ways in which the FAST Diagram enhances the efficiency of this school project and contributes to better project performance. Use a diagram to support your answer.

*Pasukan projek ditugaskan untuk mereka bentuk fasiliti sekolah yang mampan. Sebagai sebahagian daripada kajian pengurusan nilai, pasukan memutuskan untuk menggunakan Rajah Teknik Sistem Analisis Fungsi (FAST) untuk meningkatkan kecekapan projek. Pertimbangkan **EMPAT (4)** cara utama di mana Rajah FAST meningkatkan kecekapan projek sekolah ini dan menyumbang kepada prestasi projek yang lebih baik. Gunakan rajah untuk menyokong jawapan anda.*

[15 marks]

[15 markah]

QUESTION 4**SOALAN 4**

CLO1

- (a) In value management, functions are classified into different types to help analyze and optimize project value. Differentiate basic function and secondary function.

Dalam pengurusan nilai, fungsi dikelaskan kepada jenis yang berbeza untuk membantu menganalisis dan mengoptimumkan nilai projek. Bezakan fungsi asas dan fungsi sekunder.

[10 marks]

[10 markah]

CLO2

- (b) A property management company is considering three possible HVAC (Heating, Ventilation, and Air Conditioning) systems for installation in a newly developed commercial building. Each system has different upfront costs, annual energy savings, annual maintenance cost, salvage value and lifespan. Provide your expert recommendation on the best HVAC system to install. Estimate the life cycle cost (LCC) of the selected system given a discounted rate of 10%.

Sebuah syarikat pengurusan hartanah sedang mempertimbangkan tiga kemungkinan sistem HVAC (Pemanasan, Pengudaraan dan Penyaman Udara) untuk pemasangan di bangunan komersial yang baru dibangunkan. Setiap sistem mempunyai kos permulaan, penjimatan tenaga tahunan, kos penyelenggaraan tahunan, nilai sisa dan jangka hayat yang berbeza. Berikan cadangan pakar anda tentang sistem HVAC terbaik untuk dipasang. Anggarkan kos kitaran hayat (LCC) sistem yang dipilih dengan kadar diskaun sebanyak 10%.

OPTION	UPFRONT COST	ANNUAL ENERGY SAVINGS	ANNUAL MAINTENANCE COST	SALVAGE VALUE	LIFE SPAN
<i>Pilihan</i>	<i>Kos Pendahuluan</i>	<i>Penjimatan Tenaga Tahunan</i>	<i>Kos Penyelenggaraan Tahunan</i>	<i>Nilai Sisa</i>	<i>Jangka Hayat</i>
Option 1 BRAND A	\$60,000	\$8,000	\$1,000	\$5,000	20 years
Option 2 BRAND B	\$70,000	\$10,000	\$1,500	\$7,500	20 years
Option 3 BRAND C	\$80,000	\$12,000	\$2,000	\$10,000	20 years

Table 4(b) : Life cycle cost for HVAC system

Jadual 4(b) : Kos kitaran hayat sistem HVAC

[15 marks]

[15 markah]

SOALAN TAMAT

Present Value and Future Value Tables

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

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	0.8638	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	0.9238	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	0.5337	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	0.3898	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	0.2946	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	0.2897	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	0.0397	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	0.1883	0.1631	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	0.1696	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	0.0728	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	0.3418	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	0.1378	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	0.0736	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	0.7419	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	0.0026	0.0019	0.0014	*	*	*
40	0.6717	0.4529	0.3066	0.2083	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	0.0013	0.0010	0.0007	*	*	*
50	0.6080	0.3715	0.2281	0.1407	0.0872	0.0543	0.0339	0.0213	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 : $PVIFA = [1 - 1/(1+k)^n] / k$

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	2.8839	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	2.2096	2.1743	2.1399	2.1065	1.9813	1.9520	1.8161
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	2.7432	2.6901	2.6386	2.5887	2.4043	2.3616	2.1662
5	4.8534	4.7135	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	3.1993	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	4.7665	4.6229	4.4859	4.3553	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	4.6389	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	6.1446	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	6.2085	5.9377	5.6869	5.4527	5.2337	5.0286	4.8364	4.6560	4.4865	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	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218	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	3.8593	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	4.0591	3.9099	3.2948
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	5.8178	5.5339	5.2732	5.0333	4.8122	4.0799	3.9279	3.3037
19	17.2260	15.6785	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501	8.3649	7.8393	7.3658	6.9380	6.5504	6.1982	5.8775	5.5845	5.3162	5.0700	4.8435	4.0967	3.9424	3.3105
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	5.9288	5.6278	5.3527	5.1009	4.8696	4.1103	3.9539	3.3158
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	5.6648	5.3837	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	7.1695	6.7429	6.3587	6.0113	5.6964	5.4099	5.1486	4.9094	4.1300	3.9705	3.3230
23	20.4558	18.2922	16.4436	14.8568	13.4886	12.3034	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	14.0939	12.7634	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	22.3985	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	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	3.3321
35	29.4086	24.9986	21.4872	18.6846	16.3742	14.4982	12.9477	11.6546	10.5668	9.6442	8.8552	8.1755	7.5856	7.0700	6.6166	6.2153	5.8582	5.5386	5.2512	4.9915	4.1644	3.9984	3.3330
36	30.1075	25.4888	21.8323	18.9083	16.5469	14.6210	13.0352	11.7172	10.6118	9.6765	8.8786	8.1924	7.5979	7.0790	6.6231	6.2201	5.8617	5.5412	5.2531	4.9929	4.1649	3.9987	3.3331
40	32.8347	27.3555	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	10.7574	9.7791	8.9511	8.2438	7.6344	7.1050	6.6418	6.2335	5.8713	5.5482	5.2582	4.9966	4.1659	3.9995	3.3332
50	39.1961	31.4236	25.7298	21.4822	18.2559	15.7619	13.8007	12.2335	10.9617	9.9148	9.0417	8.3045	7.6752	7.1327	6.6605	6.2463	5.8801	5.5541	5.2623	4.9995	4.1666	3.9999	3.3333