

(10%) 1. 一投資方案之期初成本為 100 萬, 壽命 5 年, 每年底收入 50 萬, 每年支出 22 萬, 若最低期望報酬 (MARR) 為 8%, 試以現值分析法說明是否值得投資。

(10%) 2. 一公共設施之投資等值年金成本 (EUAC) 為 \$20,000, 假設每年有 10,000 人使用該設施, 平均每位使用者受益 \$3, (1) 試求成本效益比率 (B/C ratio)。(2) 假設每位使用者每年收費 \$1.5, 則成本效益比率為何? (3) 試比較說明 (1) 與 (2) 中之結果。

(20%) 3. 比較下列二方案

年	A	B
0	-10	-20
1	15	28

試分別以 (1) 年金分析法 與 (2) 內生報酬率法分析 (MARR=15%)

(15%) 4. A 君參加一互助會, 連會費共 32 會。已經 5 個月了, 他交了 2 萬元, 1.6 萬元, 1.5 萬元, 1.7 萬元, 1.6 萬元, 及 1.5 萬元。第 6 個月又要標會了, 如果 A 君期望月複利率 1%, 則他應應多少標金。

(15%) 5. 某廠商考慮下列之新產品生產計畫:

銷售價格	每單位 \$12.50	
設備成本	\$200,000	(壽命 5 年, 殘值為 0)
每年之固定支出	\$50,000	
營運與維修成本	每小時 \$25	
生產 1000 單位產品費時為	100 小時	
MARR	15%	
規劃期間	5 年	

187

試求取損益兩平 (break-even) 點。

Table A.2 Discrete Compound Interest Table  $i = 1.0\%$

n	COMPOUND				DISCOUNT			
	(F P,i,n)	(P F,i,n)	(F U,i,n)	(U P,i,n)	(P G,i,n)	(G P,i,n)	(U F,i,n)	(F U,i,n)
1	1.0100	0.9901	1.0000	0.9901	1.0100	0.0000	0.0000	0.0000
2	1.0201	0.9803	2.0100	1.9704	0.9704	0.0000	0.0000	0.0000
3	1.0303	0.9706	3.0300	2.9410	0.9505	0.0003	0.0003	0.0003
4	1.0406	0.9610	4.0604	3.9020	0.2563	0.0043	0.0043	0.0043
5	1.0510	0.9515	5.1010	4.8534	0.2060	0.0101	0.0101	0.0101
6	1.0615	0.9420	6.1520	5.7955	0.1725	0.0172	0.0172	0.0172
7	1.0721	0.9327	7.2135	6.7282	0.1486	0.0248	0.0248	0.0248
8	1.0829	0.9235	8.2857	7.6517	0.1307	0.0309	0.0309	0.0309
9	1.0937	0.9143	9.3685	8.5660	0.1167	0.0356	0.0356	0.0356
10	1.1046	0.9053	10.4622	9.4713	0.1056	0.0391	0.0391	0.0391
11	1.1157	0.8963	11.5668	10.3676	0.0965	0.0415	0.0415	0.0415
12	1.1268	0.8874	12.6825	11.2551	0.0888	0.0430	0.0430	0.0430
13	1.1381	0.8787	13.8093	12.1337	0.0824	0.0437	0.0437	0.0437
14	1.1495	0.8700	14.9474	13.0037	0.0769	0.0435	0.0435	0.0435
15	1.1610	0.8613	16.0969	13.8650	0.0721	0.0424	0.0424	0.0424
16	1.1726	0.8528	17.2579	14.7179	0.0679	0.0406	0.0406	0.0406
17	1.1843	0.8444	18.4304	15.5622	0.0643	0.0383	0.0383	0.0383
18	1.1961	0.8360	19.6147	16.3983	0.0610	0.0357	0.0357	0.0357
19	1.2081	0.8277	20.8109	17.2260	0.0581	0.0329	0.0329	0.0329
20	1.2202	0.8195	22.0190	18.0455	0.0554	0.0300	0.0300	0.0300
21	1.2324	0.8114	23.2392	18.8570	0.0530	0.0270	0.0270	0.0270
22	1.2447	0.8034	24.4716	19.6604	0.0509	0.0240	0.0240	0.0240
23	1.2572	0.7954	25.7163	20.4558	0.0489	0.0210	0.0210	0.0210
24	1.2697	0.7876	26.9735	21.2434	0.0471	0.0180	0.0180	0.0180
25	1.2824	0.7798	28.2432	22.0231	0.0454	0.0150	0.0150	0.0150
26	1.2953	0.7720	29.5256	22.7952	0.0439	0.0120	0.0120	0.0120
27	1.3082	0.7644	30.8209	23.5596	0.0424	0.0090	0.0090	0.0090
28	1.3213	0.7568	32.1291	24.3164	0.0411	0.0060	0.0060	0.0060
29	1.3345	0.7493	33.4504	25.0658	0.0399	0.0030	0.0030	0.0030
30	1.3478	0.7419	34.7849	25.8077	0.0387	0.0000	0.0000	0.0000
35	1.4166	0.7059	41.6503	29.4086	0.0240	0.0000	0.0000	0.0000
40	1.4889	0.6717	48.8863	32.8347	0.0205	0.0000	0.0000	0.0000
45	1.5648	0.6391	56.4810	36.0945	0.0177	0.0000	0.0000	0.0000
50	1.6446	0.6080	64.4631	39.1961	0.0155	0.0000	0.0000	0.0000
55	1.7285	0.5785	72.8524	42.1472	0.0137	0.0000	0.0000	0.0000
60	1.8167	0.5504	81.6696	44.9550	0.0122	0.0000	0.0000	0.0000
70	2.0068	0.4983	100.6763	50.1685	0.0099	0.0000	0.0000	0.0000
80	2.2167	0.4511	121.6714	56.8882	0.0082	0.0000	0.0000	0.0000
90	2.4486	0.4084	144.8632	64.4632	0.0069	0.0000	0.0000	0.0000
100	2.7048	0.3697	170.4812	73.0289	0.0059	0.0000	0.0000	0.0000

Table A.6 Discrete Compound Interest Table  $i = 5.0\%$

n	COMPOUND				DISCOUNT			
	(F P,i,n)	(P F,i,n)	(F U,i,n)	(U P,i,n)	(P G,i,n)	(G P,i,n)	(U F,i,n)	(F U,i,n)
1	1.0500	0.9524	1.0000	0.9524	1.0500	0.0000	0.0000	0.0000
2	1.1025	0.9070	2.0500	1.8594	0.9070	0.0000	0.0000	0.0000
3	1.1576	0.8638	3.1576	2.7232	0.8638	0.0000	0.0000	0.0000
4	1.2155	0.8227	4.3101	3.5460	0.8227	0.0000	0.0000	0.0000
5	1.2763	0.7835	5.5256	4.3295	0.7835	0.0000	0.0000	0.0000
6	1.3401	0.7462	6.8019	5.0757	0.7462	0.0000	0.0000	0.0000
7	1.4071	0.7107	8.1420	5.7864	0.7107	0.0000	0.0000	0.0000
8	1.4775	0.6768	9.5491	6.4632	0.6768	0.0000	0.0000	0.0000
9	1.5513	0.6446	11.0266	7.1078	0.6446	0.0000	0.0000	0.0000
10	1.6289	0.6139	12.5779	7.7217	0.6139	0.0000	0.0000	0.0000
11	1.7103	0.5847	14.2068	8.3064	0.5847	0.0000	0.0000	0.0000
12	1.7959	0.5568	15.9171	8.8633	0.5568	0.0000	0.0000	0.0000
13	1.8856	0.5303	17.7130	9.3936	0.5303	0.0000	0.0000	0.0000
14	1.9799	0.5051	19.5986	9.8986	0.5051	0.0000	0.0000	0.0000
15	2.0789	0.4810	21.5786	10.3797	0.4810	0.0000	0.0000	0.0000
16	2.1829	0.4581	23.6575	10.8378	0.4581	0.0000	0.0000	0.0000
17	2.2920	0.4363	25.8404	11.2741	0.4363	0.0000	0.0000	0.0000
18	2.4066	0.4155	28.1324	11.6886	0.4155	0.0000	0.0000	0.0000
19	2.5269	0.3957	30.5390	12.0853	0.3957	0.0000	0.0000	0.0000
20	2.6533	0.3769	33.0659	12.4622	0.3769	0.0000	0.0000	0.0000
21	2.7860	0.3599	35.7192	12.8212	0.3599	0.0000	0.0000	0.0000
22	2.9253	0.3448	38.5052	13.1630	0.3448	0.0000	0.0000	0.0000
23	3.0715	0.3305	41.4305	13.4886	0.3305	0.0000	0.0000	0.0000
24	3.2251	0.3169	44.5020	13.7986	0.3169	0.0000	0.0000	0.0000
25	3.3864	0.2953	47.7271	14.0939	0.2953	0.0000	0.0000	0.0000
26	3.5557	0.2812	51.1134	14.3752	0.2812	0.0000	0.0000	0.0000
27	3.7335	0.2678	54.6691	14.6430	0.2678	0.0000	0.0000	0.0000
28	3.9201	0.2551	58.4026	14.8981	0.2551	0.0000	0.0000	0.0000
29	4.1161	0.2429	62.3227	15.1411	0.2429	0.0000	0.0000	0.0000
30	4.3219	0.2314	66.4388	15.3725	0.2314	0.0000	0.0000	0.0000
35	5.5160	0.1813	90.3203	16.3742	0.1813	0.0000	0.0000	0.0000
40	7.0400	0.1420	120.7997	17.1591	0.1420	0.0000	0.0000	0.0000
45	8.9850	0.1113	159.7001	17.7741	0.1113	0.0000	0.0000	0.0000
50	11.4674	0.0872	209.3479	18.2559	0.0872	0.0000	0.0000	0.0000
55	14.6356	0.0683	272.7125	18.6335	0.0683	0.0000	0.0000	0.0000
60	18.6792	0.0535	353.5836	18.9293	0.0535	0.0000	0.0000	0.0000
70	30.4264	0.0329	588.5283	19.3427	0.0329	0.0000	0.0000	0.0000
80	49.5614	0.0202	971.2283	19.5965	0.0202	0.0000	0.0000	0.0000
90	80.7303	0.0124	1594.6064	19.7523	0.0124	0.0000	0.0000	0.0000
100	131.5012	0.0076	2610.0236	19.8479	0.0076	0.0000	0.0000	0.0000

Table A.16 Discrete Compound Interest Table  $i = 20.0\%$

n	(FIP,i,n)	COMPOUND			(FUI,i,n)	(UIF,i,n)	DISCOUNT			(PIG,i,n)
		AMOUNT	DISCOUNT	UNIFORM			SINKING	UNIFORM	DISCOUNT	
	FACTOR	AMOUNT	FACTOR	FACTOR	FACTOR	FACTOR	FACTOR	FACTOR	FACTOR	
1	1.2000	0.8333	1.0000	0.8333	1.2000	0.0000	0.0000	0.0000	0.0000	
2	1.4400	0.6944	2.2000	1.5278	0.6545	0.6944	0.6944	0.6944	0.6944	
3	1.7280	0.5787	3.6400	2.1065	0.4747	1.8519	1.8519	1.8519	1.8519	
4	2.0736	0.4823	5.3680	2.5887	0.3863	3.2986	3.2986	3.2986	3.2986	
5	2.4883	0.4019	7.4416	2.9906	0.3344	4.9061	4.9061	4.9061	4.9061	
6	2.9860	0.3349	9.9299	3.3255	0.3007	6.5806	6.5806	6.5806	6.5806	
7	3.5832	0.2791	12.9159	3.6046	0.2774	8.2551	8.2551	8.2551	8.2551	
8	4.2998	0.2326	16.4991	3.8372	0.2606	9.8831	9.8831	9.8831	9.8831	
9	5.1598	0.1938	20.7989	4.0310	0.2481	11.4335	11.4335	11.4335	11.4335	
10	6.1917	0.1615	25.9587	4.1925	0.2385	12.8871	12.8871	12.8871	12.8871	
11	7.4301	0.1346	32.1504	4.3271	0.2311	14.2330	14.2330	14.2330	14.2330	
12	8.9161	0.1122	39.5805	4.4392	0.2253	15.4657	15.4657	15.4657	15.4657	
13	10.6993	0.0935	48.4965	4.5327	0.2206	16.5883	16.5883	16.5883	16.5883	
14	12.8392	0.0779	59.1959	4.6106	0.2169	17.6008	17.6008	17.6008	17.6008	
15	15.4070	0.0649	72.0351	4.6755	0.2139	18.5095	18.5095	18.5095	18.5095	
16	18.4884	0.0541	87.4421	4.7296	0.2114	19.3208	19.3208	19.3208	19.3208	
17	22.1861	0.0451	105.9305	4.7746	0.2094	20.0419	20.0419	20.0419	20.0419	
18	26.6233	0.0376	128.1167	4.8122	0.2078	20.6805	20.6805	20.6805	20.6805	
19	31.9480	0.0313	154.7400	4.8435	0.2065	21.2439	21.2439	21.2439	21.2439	
20	38.3376	0.0261	185.6880	4.8696	0.2054	21.7395	21.7395	21.7395	21.7395	
21	45.0051	0.0217	225.0256	4.8913	0.2044	22.1742	22.1742	22.1742	22.1742	
22	52.2061	0.0181	271.0307	4.9094	0.2037	22.5546	22.5546	22.5546	22.5546	
23	60.2474	0.0151	326.2368	4.9245	0.2031	22.8867	22.8867	22.8867	22.8867	
24	79.4968	0.0126	392.4842	4.9371	0.2025	23.1760	23.1760	23.1760	23.1760	
25	99.3962	0.0105	471.9810	4.9476	0.2021	23.4276	23.4276	23.4276	23.4276	
26	114.4754	0.0087	567.3772	4.9563	0.2018	23.6460	23.6460	23.6460	23.6460	
27	137.3705	0.0073	681.8527	4.9636	0.2015	23.8353	23.8353	23.8353	23.8353	
28	164.8446	0.0061	819.2232	4.9697	0.2012	23.9991	23.9991	23.9991	23.9991	
29	197.8136	0.0051	984.0578	4.9747	0.2010	24.1406	24.1406	24.1406	24.1406	
30	237.3763	0.0042	1181.8814	4.9789	0.2008	24.2628	24.2628	24.2628	24.2628	

Table A.17 Discrete Compound Interest Table  $i = 25.0\%$

n	(FIP,i,n)	COMPOUND			(FUI,i,n)	(UIF,i,n)	DISCOUNT			(PIG,i,n)
		AMOUNT	DISCOUNT	UNIFORM			SINKING	UNIFORM	DISCOUNT	
	FACTOR	AMOUNT	FACTOR	FACTOR	FACTOR	FACTOR	FACTOR	FACTOR	FACTOR	
1	1.2500	0.8000	1.0000	0.8000	1.2500	0.0000	0.0000	0.0000	0.0000	
2	1.5625	0.6400	2.2500	1.4400	0.6944	0.6400	0.6400	0.6400	0.6400	
3	1.9531	0.5120	3.8125	2.0623	0.5123	1.9520	1.9520	1.9520	1.9520	
4	2.4414	0.4096	5.7656	2.734	0.4234	2.8928	2.8928	2.8928	2.8928	
5	3.0518	0.3277	8.2070	3.4631	0.3718	4.2035	4.2035	4.2035	4.2035	
6	3.8147	0.2621	11.2588	4.2514	0.3388	5.5142	5.5142	5.5142	5.5142	
7	4.7684	0.2097	15.0735	5.1063	0.3163	6.7725	6.7725	6.7725	6.7725	
8	5.9605	0.1678	19.8419	6.0504	0.3004	7.9469	7.9469	7.9469	7.9469	
9	7.4506	0.1342	25.8023	7.0388	0.2888	9.0207	9.0207	9.0207	9.0207	
10	9.3132	0.1074	33.2529	8.0301	0.2801	9.9870	9.9870	9.9870	9.9870	
11	11.6415	0.0859	42.5661	9.0235	0.2735	10.8460	10.8460	10.8460	10.8460	
12	14.5519	0.0687	54.2077	10.0184	0.2684	11.6020	11.6020	11.6020	11.6020	
13	18.1899	0.0550	68.7596	11.0145	0.2645	12.2617	12.2617	12.2617	12.2617	
14	22.7374	0.0440	86.9495	12.0115	0.2615	12.8334	12.8334	12.8334	12.8334	
15	28.4217	0.0352	109.6868	13.0091	0.2591	13.3260	13.3260	13.3260	13.3260	
16	35.5271	0.0281	138.1085	14.0072	0.2572	13.7482	13.7482	13.7482	13.7482	
17	44.4089	0.0225	173.6357	15.0058	0.2558	14.1085	14.1085	14.1085	14.1085	
18	55.5112	0.0180	218.0446	16.0046	0.2546	14.4187	14.4187	14.4187	14.4187	
19	69.3889	0.0144	273.5558	17.0037	0.2537	14.6741	14.6741	14.6741	14.6741	
20	86.7362	0.0115	342.9447	18.0029	0.2529	14.8932	14.8932	14.8932	14.8932	
21	108.4202	0.0092	429.6809	19.0023	0.2523	15.0777	15.0777	15.0777	15.0777	
22	135.5253	0.0074	538.1011	20.0019	0.2519	15.2326	15.2326	15.2326	15.2326	
23	169.4066	0.0059	673.6263	21.0015	0.2515	15.3625	15.3625	15.3625	15.3625	
24	211.7582	0.0047	843.0329	22.0012	0.2512	15.4711	15.4711	15.4711	15.4711	
25	264.6978	0.0038	1054.7912	23.0009	0.2509	15.5618	15.5618	15.5618	15.5618	
26	330.8722	0.0030	1319.4890	24.0008	0.2508	15.6373	15.6373	15.6373	15.6373	
27	413.5903	0.0024	1650.3612	25.0006	0.2506	15.7002	15.7002	15.7002	15.7002	
28	516.9879	0.0019	2063.9315	26.0005	0.2505	15.7524	15.7524	15.7524	15.7524	
29	646.2348	0.0015	2580.9394	27.0004	0.2504	15.7957	15.7957	15.7957	15.7957	
30	807.7935	0.0012	3227.1742	28.0003	0.2503	15.8316	15.8316	15.8316	15.8316	

(20%) 6. 某建設公司擬於一建地上蓋房子, 其方案有三:  $A_1$  - 辦公大樓,  $A_2$  - 住宅大廈,  $A_3$  - 辦公與住宅混合大樓。若大樓完成時市場之狀態有三種情形:  $N_1$  - 經濟好辦公大樓需求高,  $N_2$  - 住宅需求高, 而  $N_3$  - 兩者需求差不多。據估計在各種狀態下之報酬矩陣如下:

	$N_1$	$N_2$	$N_3$
$A_1$	15	8	21
$A_2$	9	14	10
$A_3$	13	4	26

(1) 試作圖說明風險情況決策之敏感性。

(2) 若  $P(N_1) = 0.3$ ,  $P(N_2) = 0.4$ ,  $P(N_3) = 0.3$  試分別以期望報酬最大  
而期望機會損失最小之方式做決策。

(10%) 7. 試列舉從事公共專案之資源分配決策 (Resource Allocation Decisions for Public Projects) 時之重要考慮因素, 及各因素之意義。

Table A.11 Discrete Compound Interest Table  $i = 10.0\%$

n	(P/F, i, n)			(F/U, i, n)			(U/F, i, n)			(V/P, i, n)		
	COMPOUND AMOUNT FACTOR	DISCOUNT FACTOR	UNIFORM SERIES FACTOR	DISCOUNT AMOUNT FACTOR	UNIFORM SERIES FACTOR	SINKING FUND FACTOR	DISCOUNT AMOUNT FACTOR	UNIFORM SERIES FACTOR	CAPITAL RECOVERY FACTOR	DISCOUNT GRADIENT FACTOR		
1	1.1000	0.9091	1.0000	0.9091	0.9091	1.0000	1.0000	1.0000	1.1000	0.0000		
2	1.2100	0.8264	2.1000	1.7355	0.8264	0.4762	0.8264	0.8264	0.5762	0.8264		
3	1.3310	0.7513	3.3100	2.4869	0.7513	0.3021	2.3291	2.3291	0.4021	2.3291		
4	1.4641	0.6830	4.6410	3.1699	0.6830	0.2155	3.1699	3.1699	0.3155	4.3781		
5	1.6105	0.6209	6.1051	3.7908	0.6209	0.1638	3.7908	3.7908	0.2638	6.8618		
6	1.7716	0.5645	7.7156	4.3553	0.5645	0.1296	4.3553	4.3553	0.2296	9.6842		
7	1.9487	0.5132	9.4872	4.8684	0.5132	0.1054	4.8684	4.8684	0.2054	12.7631		
8	2.1436	0.4665	11.4359	5.3349	0.4665	0.0874	5.3349	5.3349	0.1874	16.0287		
9	2.3579	0.4241	13.5795	5.7590	0.4241	0.0736	5.7590	5.7590	0.1736	19.4214		
10	2.5937	0.3855	15.9374	6.1446	0.3855	0.0627	6.1446	6.1446	0.1627	22.8913		
11	2.8531	0.3505	18.5312	6.4951	0.3505	0.0540	6.4951	6.4951	0.1540	26.3963		
12	3.1364	0.3186	21.3643	6.8137	0.3186	0.0468	6.8137	6.8137	0.1468	29.9012		
13	3.4523	0.2897	24.5227	7.1034	0.2897	0.0408	7.1034	7.1034	0.1408	33.3772		
14	3.7975	0.2633	27.9750	7.3667	0.2633	0.0357	7.3667	7.3667	0.1357	36.8005		
15	4.1772	0.2394	31.7725	7.6061	0.2394	0.0315	7.6061	7.6061	0.1315	40.1520		
16	4.5950	0.2176	35.9497	7.8237	0.2176	0.0278	7.8237	7.8237	0.1278	43.4164		
17	5.0545	0.1978	40.5447	8.0216	0.1978	0.0247	8.0216	8.0216	0.1247	46.5819		
18	5.5599	0.1798	45.5952	8.2019	0.1798	0.0219	8.2019	8.2019	0.1219	49.6395		
19	6.1159	0.1635	51.1591	8.3649	0.1635	0.0195	8.3649	8.3649	0.1195	52.5827		
20	6.7275	0.1486	57.2750	8.5136	0.1486	0.0175	8.5136	8.5136	0.1175	55.4069		
21	7.4002	0.1351	64.0025	8.6487	0.1351	0.0156	8.6487	8.6487	0.1156	58.1095		
22	8.1403	0.1228	71.4027	8.7715	0.1228	0.0140	8.7715	8.7715	0.1140	60.6893		
23	8.9543	0.1117	79.5430	8.8832	0.1117	0.0126	8.8832	8.8832	0.1126	63.1462		
24	9.8497	0.1015	88.4973	8.9847	0.1015	0.0113	8.9847	8.9847	0.1113	65.4813		
25	10.8347	0.0923	98.3470	9.0770	0.0923	0.0102	9.0770	9.0770	0.1102	67.6964		
26	11.9182	0.0839	109.1817	9.1609	0.0839	0.0092	9.1609	9.1609	0.1092	69.7940		
27	13.1100	0.0763	121.0999	9.2372	0.0763	0.0083	9.2372	9.2372	0.1083	71.7772		
28	14.4210	0.0693	134.2099	9.3066	0.0693	0.0075	9.3066	9.3066	0.1075	73.6495		
29	15.8631	0.0630	148.6309	9.3696	0.0630	0.0067	9.3696	9.3696	0.1067	75.4146		
30	17.4494	0.0573	164.4940	9.4269	0.0573	0.0061	9.4269	9.4269	0.1061	77.0766		
35	28.1024	0.0356	271.0243	9.6442	0.0356	0.0037	9.6442	9.6442	0.1037	83.9871		
40	45.3592	0.0221	442.5924	9.7791	0.0221	0.0023	9.7791	9.7791	0.1023	88.9525		
45	72.8904	0.0137	718.9045	9.8628	0.0137	0.0014	9.8628	9.8628	0.1014	92.4544		
50	117.3908	0.0085	1163.9079	9.9148	0.0085	0.0009	9.9148	9.9148	0.1009	94.8889		
55	189.0590	0.0053	1880.5903	9.9471	0.0053	0.0005	9.9471	9.9471	0.1005	96.5619		

Table A.14 Discrete Compound Interest Table  $i = 15.0\%$

n	(P/F, i, n)			(F/U, i, n)			(U/F, i, n)			(V/P, i, n)		
	COMPOUND AMOUNT FACTOR	DISCOUNT FACTOR	UNIFORM SERIES FACTOR	DISCOUNT AMOUNT FACTOR	UNIFORM SERIES FACTOR	SINKING FUND FACTOR	DISCOUNT AMOUNT FACTOR	UNIFORM SERIES FACTOR	CAPITAL RECOVERY FACTOR	DISCOUNT GRADIENT FACTOR		
1	1.1500	0.8696	1.0000	0.8696	1.0000	1.0000	1.0000	1.0000	1.1500	0.0000		
2	1.3225	0.7561	2.1500	1.5209	0.7561	0.4851	1.5209	1.5209	0.6151	0.7561		
3	1.5209	0.6575	3.4725	2.0880	0.6575	0.2880	2.0880	2.0880	0.4380	2.0712		
4	1.7450	0.5718	4.9934	2.6550	0.5718	0.2003	2.6550	2.6550	0.3503	3.7864		
5	2.0114	0.4972	6.7424	3.2322	0.4972	0.1483	3.2322	3.2322	0.2983	5.7751		
6	2.3131	0.4323	8.7537	3.8194	0.4323	0.1142	3.8194	3.8194	0.2642	7.9368		
7	2.6600	0.3759	11.0668	4.4164	0.3759	0.0904	4.4164	4.4164	0.2404	10.1924		
8	3.0590	0.3269	13.7268	5.0239	0.3269	0.0729	5.0239	5.0239	0.2229	12.4807		
9	3.5179	0.2843	16.7858	5.6416	0.2843	0.0596	5.6416	5.6416	0.2096	14.7548		
10	4.0456	0.2472	20.3037	6.2694	0.2472	0.0493	6.2694	6.2694	0.1993	16.9795		
11	4.6524	0.2149	24.3493	6.9071	0.2149	0.0411	6.9071	6.9071	0.1911	19.1289		
12	5.3503	0.1869	29.0017	7.5548	0.1869	0.0345	7.5548	7.5548	0.1845	21.1849		
13	6.1528	0.1625	34.3519	8.2125	0.1625	0.0291	8.2125	8.2125	0.1791	23.1352		
14	7.0757	0.1413	40.5047	8.8802	0.1413	0.0247	8.8802	8.8802	0.1747	24.9725		
15	8.1371	0.1229	47.5804	9.5579	0.1229	0.0210	9.5579	9.5579	0.1710	26.6930		
16	9.3576	0.1069	55.7175	10.2456	0.1069	0.0179	10.2456	10.2456	0.1679	28.2960		
17	10.7613	0.0929	65.0751	10.9433	0.0929	0.0154	10.9433	10.9433	0.1654	29.7828		
18	12.3755	0.0808	75.8364	11.6510	0.0808	0.0132	11.6510	11.6510	0.1632	31.1565		
19	14.2318	0.0703	88.2118	12.3687	0.0703	0.0113	12.3687	12.3687	0.1613	32.4213		
20	16.3665	0.0611	102.4436	13.0964	0.0611	0.0098	13.0964	13.0964	0.1598	33.5822		
21	18.8215	0.0531	118.8101	13.8341	0.0531	0.0084	13.8341	13.8341	0.1584	34.6448		
22	21.6447	0.0462	137.6316	14.5818	0.0462	0.0073	14.5818	14.5818	0.1573	35.6150		
23	24.8915	0.0402	159.2764	15.3395	0.0402	0.0063	15.3395	15.3395	0.1563	36.4988		
24	28.6252	0.0349	184.1678	16.1072	0.0349	0.0054	16.1072	16.1072	0.1554	37.3023		
25	32.9190	0.0304	212.7930	16.8849	0.0304	0.0047	16.8849	16.8849	0.1547	38.0314		
26	37.8568	0.0264	245.7120	17.6726	0.0264	0.0041	17.6726	17.6726	0.1541	38.6918		
27	43.5353	0.0230	283.5688	18.4703	0.0230	0.0035	18.4703	18.4703	0.1535	39.2890		
28	50.0656	0.0200	327.1041	19.2780	0.0200	0.0031	19.2780	19.2780	0.1531	39.8283		
29	57.5755	0.0174	377.1697	20.0957	0.0174	0.0027	20.0957	20.0957	0.1527	40.3146		
30	66.2118	0.0151	434.7451	20.9234	0.0151	0.0023	20.9234	20.9234	0.1523	40.7526		