

## **CPA PART II SECTION 3**

#### **CS PART II SECTION 3**

#### **CCP PART II SECTION 3**

#### FINANCIAL MANAGEMENT

WEDNESDAY: 29 November 2017.

Time Allowed: 3 hours.

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

#### **OUESTION ONE**

- (a) Explain four factors that might be considered when establishing an effective credit policy in an organisation. (4 marks)
- (b) Summarise four hindrances to international standardisation of Islamic finance.

(4 marks)

- (c) Illustrate how the problem of window dressing manifests itself immeasuring business performance using financial ratio analysis. (4 marks)
- (d) The management of Gumbo Ltd. intends to change the company's credit policy from 'net 30' to '3/10 net 60'. If this change is effected, annual sales are expected to increase by 25% from the current level of Sh.12 million. The proportion of bad debts is also expected to increase from 10% to 15% of the credit sales.

A new credit assistant officer will also have to be employed at a salary of Sh.500,000 per annum. If there is a change in the firm's credit policy, it is expected that 60% of the credit customers will benefit from the cash discount offer.

The inventory level and variable costs are however expected to remain constant at 20% and 40% of the annual sales respectively. The firm's rate of return on investment is 14% per annum.

The corporate tax rate is 30%

All sales are on credit.

Assume a 360-day financial year.

#### Required:

Advise the management of Gumbo Ltd. on whether to adopt the new credit policy.

(8 marks)

(Total: 20 marks)

## **QUESTION TWO**

(a) Explain four limitations of dividend growth model.

(4 marks)

(b) Maji Mazuri Ltd. an all equity financed company has an issued share capital of Sh.10 million ordinary shares of Sh.10 par value. The company paid a dividend of Sh.0.4 per share last period and the market price per share is Sh.20 ex-dividend.

The company is contemplating raising additional funds through a rights issue. The management has proposed a 1 for 4 rights issue at an issue price of Sh.15 per share. The funds raised are intended to be used to finance a major new project which is expected to increase the company's annual after tax cash flows by Sh.950,000 in perpetuity.

(i) The cum-right market price per share (MPS) after the announcement of the rights issue.

(4 marks)

(ii) The theoretical ex-right market price per share.

(2 marks)

(iii) The theoretical value of each right.

(2 marks)

- (c) Evaluate the impact of the rights issue in (b) above on the value of wealth of an existing shareholder who holds 1,600 ordinary shares in Maji Mazuri Ltd. and Sh.10,000 in his savings account assuming that this shareholder decides to:
  - (i) Exercise all his rights.

(3 marks)

(ii) Sell all his rights.

(3 marks)

(iii) Ignore the rights issue.

(2 marks)

(Total: 20 marks)

## **QUESTION THREE**

(a) The ordinary shares of Kwekwe Ltd. are currently selling at Sh.60 each at the securities exchange. The company's price-earnings ratio is 6 times.

Kwekwe Ltd. adopts a 40% pay-out ratio as its dividend policy.

It is predicted that the company's earnings and dividends will grow at an annual rate of 10% for the first three years, 5% for the next two years and 4% thereafter in perpetuity.

The investors' minimum required rate of return is 12%.

## Required:

(i) The current intrinsic value of the shares.

(6 marks)

(ii) Advise the investors based on the result obtained in (a) (i) above.

(2 marks)

(b) Ray Properties Ltd. is planning to build a business mall. The project will cost Sh.180 million.

The firm's current optimal capital structure's as follows:

Ordinary shares (Sh.10 par value)
10% debt (Sh.100 par value)
Retained profit

Sh."000"
480,000
384,000
960,000

## Additional information:

- 1. The firm will issue a new 15% debenture at Sh.120 each with a floatation cost of Sh.10 per unit. The par value of each debenture is Sh.100.
- 2. New ordinary shares will be issued at the current market price of Sh.30 each with a floatation cost of Sh.5 per share
- 3. The most recent dividend paid by the company was Sh.5 per share.
- 4. The dividend is expected to grow at the rate of 5% per annum in perpetuity.
- 5. The firm expects to retain Sh.18 million to finance this investment.
- 6. The corporate tax rate is 30%.

## Required:

(i) The amount to be raised from equity capital, if the capital structure is to remain unchanged.

(3 marks)

(ii) The number of ordinary shares the company should issue to raise the desired external equity capital. (3 marks)

(iii) The firm's weighted marginal cost of capital (WMCC).

(6 marks)

(Total: 20 marks)

#### **QUESTION FOUR**

(a) Describe four types of money market instruments.

(4 marks)

(b) Highlight three agency costs that might arise in the principal-agent relationship between shareholders and managers.

(3 marks)

(c) Karem Bottling Company is considering replacing one of the bottling machines with a more efficient one.

The old machine has a current net book value of Sh.2,400,000 with a remaining useful life of five years. The old machine has an estimated re-sale value of Sh.200,000 at the end of its useful life.

The existing machine's current disposal value is estimated to be Sh.1,060,000.

The new machine has a purchase price of Sh.4,700,000 and an estimated useful life of 5 years. The machine is expected to have an estimated market value of Sh.600,000 at the end of the five years.

The machine is expected to economise on electric power usage and repair costs which will save the company Sh.920,000 each year. In addition, the new machine is expected to reduce the number of defective bottles which will save an additional amount of Sh.120,000 annually.

The company's corporate tax rate is 30% with a required rate of return of 12%.

The company provides for depreciation on a straight line basis.

Assume capital gains are taxable.

Required:

(i) The initial net cash outlay.

(3 marks)

(ii) The incremental net operating cash flows for years 1 through year 5.

(4 marks)

(iii) The total terminal cash flows.

(2 marks)

(iv) Using net present value (NPV) criteria, advise the management of Karem Bottling Company whether or not to purchase the new machine. (4 marks)

(Total: 20 marks)

# **QUESTION FIVE**

(a) Describe three factors that have limited the growth of venture capital investment in most developing countries.

(6 marks)

(b) Deye Ltd. has provided the following financial results:

S	Profit after tax (Sh."million")
,,,,,,,	6.0
E All	6.2
وي	6.3
CC	6.3
	access thouse

The firm's earnings yield is 12%.

#### Required

The value of the firm based on the present value of the expected earnings approach.

(4 marks)

(c) A prospective investor is intending to buy ordinary shares of a firm listed at the securities exchange whose market price per share is Sh.30.

The forecasted market price per share for the following five months is estimated as follows:

Month	Forecasted market price per share (Sh.)	Probability
1	33	0.2
2	30	0.1
3	27	0.3
4	36	0.15
5	39	0.25

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## Required:

The expected return from the investment.

(4 marks)

(d) Chitsaka Limited estimates that it requires Sh.12,000,000 for its operations during the following year.

The company will sell marketable securities and deposits into a cost-free no-interest bank account.

The marketable securities currently provide an interest yield of 5% per year.

The cost of selling marketable securities is Sh.60 per transaction regardless of the size of the transaction.

Assume a 365-day financial year.

## Required:

Using the Baumol cash management model, determine:

(i)	The optimal size of transaction for selling the marketable securities.	(4 marks)
(ii)	The frequency with which the securities should be sold.	(2 marks) (Total: 20 marks)
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# Present Value of 1 Received at the End of *n* Periods:

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

1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%
.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091	.8929	8772	.8696	.8621	.8475	.8333	.8065	:7813	.7576	.7353
.9803	.9612	.9426	.9246	.9070	.8900	8734	.8573	.8417	.8264	7972	.7695	.7561	.7432	.7182	.6944	.6504	.6104	5739	.5407
.9706	.9423	.9151	.8890	.8638	.8396	.8163	.7938	.7722	.7513	.7118	6750	6575	.6407	.6086	.5787	.5245	.4768	.4348	3975
.9610	.9238	.8885	.8548	.8227	.7921	.7629	.7350	7084	.6830	.6355	5921	5718	.5523	.5158	.4823	.4230	.3725	.3294	2923
.9515	.9057	.8626	.8219	.7835	.7473	.7130	.6806	.6499	.6209	.5674	5194	4972	.4761	.4371	.4019	.3411	2910	.2495	.2149
.9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963	.5645	.5066	.4556	.4323	.4104	.3704	.3349	.2751	.2274	.1890	.1580
.9327	.8706	.8131	.7599	.7107	.6651	.6227	.5835	.5470	.5132	.4523	.3996	3759	.3538	.3139	.2791	.2218	:1776	.1432	.1162
.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019	.4665	.4039	.3506	.3269	.3050	.2660	.2326	.1789	.1388	.1085	.0854
.9143	.8368	.7664	.7026	.6446	.5919	.5439	.5002	.4604	.4241	.3606	3075	.2843	.2630	.2255	.1938	.1443	.1084	.0822	.0628
.9053	.8203	.7441	.6756	.6139	.5584	.5083	.4632	.4224	.3855	.3220	.2697	.2472	.2267	.1911	.1615	.1164	.0847	.0623	.0462
.8963	.8043	.7224	.6496	.5847	.5268	.4751	.4289	.3875	.3505	.2875	.2366	.2149	.1954	.1619	.1346	.0938	.0662	.0472	.0340
.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555	.3186	.2567	.2076	.1869	1685	.1372	.1122	.0757	.0517	.0357	.0250
.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3262	.2897	.2292	.1821	.1625	.1452	.1163	.0935	.0610	.0404	.0271	.0184
.8700	.7579	.6611	.5775	.5051	.4423	.3878	.3405	.2992	.2633	.2046	.1597	.1413	.1252	.0985	3779	.0492	.0316	0205	.0135
.8613	.7430	.6419	.5553	.4810	.4173	.3624	3152	.2745	.2394	.1827	1401	.1229	.1079	.0835	.0649	.0397	.0247	.0155	0099
.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519	.2176	.1631	.1229	1069	.0930	8076	.0541	.0320	.0193	.0118	.0073
.8444	.7142	.6050	.5134	.4363	.3714	.3166	.2703	.2311	.1978	.1456	.1078	.0929	.0802	.0600	.0451	.0258	.0150	.0089	.0054
.8360	.7002	.5674	.4936	.4155	.3503	.2950	.2502	.2120	.1799	.1300	.0946	.0808	.069)	.0508	.0376	.0208	.0118	.0068	.0039
.8277	.6864	.5703	.4746	.3957	.3305	.2765	.2317	.1945	.1635	.1161	.0829	.0703	0596	.0431	.0313	.0168	.0092	.0051	.0029
.8195	.6730	.5537	.4564	.3769	.3118	.2584	.2145	.1784	1486	1037	.0728	.06149	.0514	.0365	.0261	.0135	.0072	.0039	.0021
.7798	.6095	.4776	.3751	.2953	.2330	.1842	.1460	.1160	.0923	.0588	.0378	0804	.0245	.0160	.0105	.0046	.0021	.0010	0005
.7419	.5521	.4120	.3083	.2314	.1741	.1314	.0994	.0754	.0573	.0334	.0196	0151	.0116	.0070	.0042	.0016	.0006	.0002	.0001
.6717	.4529	.3066	.2083	.1420	.0972	.0668	0460	.0318	.0221	.0107	.0053	.0037	.0026	.0013	.0007	,0002	.0001		
.6080	.3715	.2281	.1407	.0872	.0543	.0339	.0213	.0134	.0085	.0035	0014	.0009	.0006	.0003	.0001				
.5504	.3048	.1697	.0951	.0535	.0303	.0173	.0099	.0057	.0033	.0014	.0004	.0002	.0001						
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        .6756           .8874         .7885         .7014         .6246           .8787         .7730         .6810         .6006           .8700         .7579         .6611         .5775           .8613         .7430         .6419         .5553           .8528         .7284         .6232         .5339           8444         .7142         .6050         .5134           .8360         .7002         .5573         .4746           .8195         .6730         .5553           .844         .7142         .605</td><td>.9901         .9804         .9709         .9615         .9524           .9803         .9612         .9426         .9246         .9070           .9706         .9423         .9151         .8890         .8638           .9610         .9238         .8885         .8548         .8227           .9515         .9057         .8626         .8219         .7835           .9420         .8880         .8375         .7903         .7462           .9327         .8706         .8131         .7599         .7107           .9235         .8535         .7894         .7307         .6768           .9143         .8368         .7664         .7026         .6446           .9053         .8203         .7441         .6756         .6139           .8963         .8043         .7224         .6496         .5847           .8874         .7885         .7014         .6246         .5568           .8787         .7730         .6810         .6006         .5303           .8700         .7579         .6611         .5775         .5051           .8613         .7430         .6419         .5553         .4810           .8528</td><td>.9901         .9804         .9709         .9615         .9524         .9434           .9803         .9612         .9426         .9246         .9070         .8900           .9706         .9423         .9151         .8890         .8638         .8396           .9610         .9238         .8885         .8548         .8227         .7921           .9515         .9057         .8626         .8219    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       .5002         .4604           .9053         .8203         .7441         .6756         .6139         .5584         .5083         .4632         .4224</td><td>9901         ,9804         ,9709         ,9615         ,9524         ,9434         ,9346         ,9259         ,9174         ,9091           ,9803         ,9612         ,9426         ,9246         ,9070         ,8900         ,8734         ,8573         ,8417         ,8264           ,9706         ,9423         ,9151         ,8890         ,8638         ,8396         ,8163         ,7938         ,7722         ,7513           ,9610         ,9238         ,8885         ,8548         ,8227         ,7921         ,7629         ,7350         7064         ,6830           ,9515         ,9057         ,8626         ,8219         ,7835         ,7473         ,7130         ,6806         ,6499         ,6209           ,9420         ,8880         ,8375         ,7903         ,7462         ,7050         ,6663         ,6302         ,5963         ,5645           ,9327         ,8706         ,8131         ,7599         ,7107         ,6651         ,6227         ,5835         ,5470         ,5132           ,9327         ,8706         ,8134         ,7307         ,6768         ,6274         ,5820         ,5403         ,5019         ,4664           ,9143         ,8368</td><td>9901         9804         9709         9615         9524         9434         ,9346         ,9259         ,9174         ,9091         ,8929           ,9803         ,9612         ,9426         ,9246         ,9070         ,8900         ,8734         ,8573         ,8417         ,8264         ,7972           ,9706         ,9423         ,9151         ,8890         ,8638         ,8396         ,8163         ,7938         ,7722         ,7513         ,7118           ,9610         ,9238         ,8885         ,8548         ,8227         ,7921         ,7629         ,7350         ,7064         ,6830         ,6355           ,9515         ,9057         ,8626         ,8219         ,7835         ,7473         ,7130         ,6806         ,6499         ,6209         ,5674           ,9420         ,8880         ,8375         ,7903         ,7462         ,7050         ,6663         ,6302         ,5963         ,5645         ,5066           ,9327         ,8706         ,8131         ,7599         ,7107         ,6651         ,6227         ,5835         ,5470         ,5132         ,4523           ,9143         ,8368         ,7664         ,7026         ,6446         ,5919</td><td>.9901         .9804         .9709         .9615         .9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .9610         .9238         .8885         .8548         .8227         .7921         .7629         .7350         .7084         .6830         .6355         .5921         .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5645         .5066         .4556         .9327         .8706         .8131         .7599         .7107         .6651         .6227         .5835         .5470         .5132         .4523         .3996         .9143         .8368         .7664         .70</td><td>.9901         .9804         .9709         .9615         .9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .8696           .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561           .9706         .9423         .9151         .8690         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .6575           .9610         .9238         .8885         .8548         .8227         .7921         .7629         .7350         .7084         .6830         .6355         .5921         .5718           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194         .4972           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5645         .5066         .4556         .4323           .9327         .8706         .8131         .75599         .7107         <td< td=""><td>9901         ,9804         ,9709         ,9615         ,9524         ,9434         ,9346         ,9259         ,9174         ,9091         ,8929         ,8772         ,8696         ,8621           ,9803         ,9612         ,9426         ,9246         ,9070         ,8900         ,8734         ,8573         ,8417         ,8264         ,7972         ,7695         ,7561         ,7432           ,9706         ,9423         ,9151         ,8890         ,8638         ,8396         ,8163         ,7938         ,7722         ,7513         ,7118         ,6750         ,6575         ,6407           ,9610         ,9238         ,8885         ,8548         ,8227         ,7921         ,7629         ,7350         ,7084         ,6830         ,6335         ,5921         ,5718         ,5523           ,9515         ,9057         ,8626         ,8219         ,7835         ,7473         ,7130         ,6866         ,6499         ,6209         ,5674         ,5194         ,4972         ,4761           ,9420         ,8880         ,8375         ,7903         ,7462         ,7050         ,6663         ,6302         ,5963         ,5645         ,5066         ,4556         ,4323         ,4104</td><td>9901         9804         9709         9615         9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .8696         .8621         .8475           .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182           .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194         .4972         .4761         .4371           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5645         .5066         .4556         .4323         .4104         .3704           .9327         .8706         .8131         .7599         .7107         .6663         .6227         .5835         .5470         .</td><td>9901         9804         9709         9615         .9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .8696         .8621         .8475         .8333         .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182         .6944           .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086         .5787           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .5666         .6499         .6209         .5674         .5194         .4761         .4371         .4019           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5666         .4556         .4323         .4104         .3704         .3494           .9225         .8505         .7894         .7307         .6661         .6227         .5835</td><td>9901         9804         9709         9615         9524         9434         9346         9259         9174         9091         8929         8772         8696         8621         8475         8333         8065           9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182         .6944         .6504           .9706         .9423         .9151         .8890         .8638         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086         .5787         .5245           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194         .4972         .4761         .3711         .4019         .3411           .9327         .8706         .8131         .7599         .7107         .6651         .6227         .5835         .5470         .5132         .4523         .3996         .3759         .3538         .3139         .2791         .2218           .9232</td><td>9901 9804 9709 9615 9524 9434 9346 9259 9174 9991 8929 8772 8696 8621 8475 8333 8065 7813 9803 9612 9426 9246 9700 8890 8734 8573 8417 8264 7972 7695 7561 7432 7182 6944 6504 6104 9706 9423 9151 88890 8638 8996 8163 73938 77722 7513 7118 6750 6575 6407 8006 5787 5245 4768 97610 9238 88885 8548 8227 7921 7629 7350 7084 6830 6355 5921 5718 5523 5158 4823 4230 3725 9515 9057 8626 8219 7835 7473 7130 6806 6499 6209 5674 5194 4972 4761 4371 4019 3411 2910 9420 8880 8375 7903 7462 7050 6663 6302 5963 5470 5132 4523 3996 3759 3538 3139 2791 2218 11776 9235 8535 7894 7307 6768 6274 5820 5403 5019 4665 4039 3506 3269 3050 2660 2326 1789 1388 9143 8823 7644 6546 5919 5502 4604 4241 3606 3075 2843 2630 2255 1938 1443 1084 9803 7441 6756 6139 5584 5083 4632 4224 3855 3220 2697 2472 2267 1911 1615 1164 0847 8874 7885 7014 6246 5568 4970 4440 3971 3555 3186 2567 2076 1869 1869 1865 1372 1122 0757 0517 8874 7780 6419 5553 4810 4173 3624 3152 2745 2284 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 7740 6449 6449 1874 6765 6410 5775 5051 4423 3876 3405 2992 2633 2046 1597 1413 1252 0985 0979 0492 0316 8613 7740 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 7742 6466 5753 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 8548 8574 8548 8548 8574 8548 8548</td><td>9901 9804 9709 9615 9524 9434 9346 9359 9174 9991 8929 8772 8696 8621 8475 8333 8065 7813 7576 9803 9612 9426 9246 9070 8900 8734 8573 8417 8264 7972 7695 7561 7432 7182 6944 6504 6104 5739 9706 9423 9151 8890 8638 8396 8163 7938 7722 7513 7718 6750 6575 6407 8086 5787 5245 4768 4339 9510 9928 8885 8548 8227 7921 7629 7530 7084 6830 6355 5921 5718 57523 5158 4823 4230 3725 3294 9515 9057 8626 8219 7835 7473 7130 6806 6499 6209 5674 5194 4972 4761 4371 4019 3411 2910 2495 9927 8706 8131 7599 7107 6651 6227 5835 5470 5132 4523 3996 3759 3538 3139 2791 2218 11776 1432 9235 8535 7894 7307 6768 6274 5893 5002 4604 4241 3606 3075 2843 2630 2255 1938 1443 1084 0822 9053 8203 7441 6756 6139 5584 5083 4632 4224 3855 3220 2697 2472 2267 1911 1615 1164 0847 0623 8963 8043 7224 6496 5580 4702 4440 3971 4352 226 2897 2472 2267 1911 1615 1164 0847 0623 8864 7086 5303 4688 4150 3971 3562 2893 2043 1827 1401 1229 1079 0833 0649 0397 0247 0155 8644 7142 6050 5134 4363 3714 3166 2703 2914 2219 1716 0354 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7789 6411 5775 5551 4423 3878 3495 2792 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7700 7579 6611 5775 5551 4423 3878 3405 2992 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7709 5551 4423 3878 3405 2992 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7799 0492 0316 0205 0514 0450 0514 0450 0514 0509 0006 0451 0258 0150 0008 0007 0007 0007 0007 0007 0007 00</td></td<></td></td<>	.9901         .9804         .9709         .9615           .9803         .9612         .9426         .9246           .9706         .9423         .9151         .8890           .9610         .9238         .8885         .8548           .9515         .9057         .8626         .8219           .9420         .8880         .8375         .7903           .9327         .8706         .8131         .7599           .9235         .8535         .7894         .7307           .9143         .8368         .7664         .7026           .9053         .8203         .7441         .6756           .8874         .7885         .7014         .6246           .8787         .7730         .6810         .6006           .8700         .7579         .6611         .5775           .8613         .7430         .6419         .5553           .8528         .7284         .6232         .5339           8444         .7142         .6050         .5134           .8360         .7002         .5573         .4746           .8195         .6730         .5553           .844         .7142         .605	.9901         .9804         .9709         .9615         .9524           .9803         .9612         .9426         .9246         .9070           .9706         .9423         .9151         .8890         .8638           .9610         .9238         .8885         .8548         .8227           .9515         .9057         .8626         .8219         .7835           .9420         .8880         .8375         .7903         .7462           .9327         .8706         .8131         .7599         .7107           .9235         .8535         .7894         .7307         .6768           .9143         .8368         .7664         .7026         .6446           .9053         .8203         .7441         .6756         .6139           .8963         .8043         .7224         .6496         .5847           .8874         .7885         .7014         .6246         .5568           .8787         .7730         .6810         .6006         .5303           .8700         .7579         .6611         .5775         .5051           .8613         .7430         .6419         .5553         .4810           .8528	.9901         .9804         .9709         .9615         .9524         .9434           .9803         .9612         .9426         .9246         .9070         .8900           .9706         .9423         .9151         .8890         .8638         .8396           .9610         .9238         .8885         .8548         .8227         .7921           .9515         .9057         .8626         .8219         .7835         .7473           .9420         .8880         .8375         .7903         .7462         .7050           .9327         .8706         .8131         .7599         .7107         .6651           .9143         .8368         .7664         .7026         .6446         .5919           .9053         .8203         .7441         .6756         .6139         .5584           .8963         .8043         .7224         .6496         .5847         .5268           .8874         .7865         .7014         .6246         .5563         .4970           .8787         .7730         .6810         .6006         .5303         .4688           .8700         .7579         .6611         .5775         .5051         .4423	.9901         .9804         .9709         .9615         .9524         .9434         .9346           .9803         .9612         .9426         .9246         .9070         .8900         .8734           .9706         .9423         .9151         .8890         .8638         .8396         .8163           .9610         .9238         .8885         .8548         .8227         .7921         .7629           .9515         .9057         .8626         .8219         .7835         .7473         .7130           .9420         .8880         .8375         .7903         .7462         .7050         .6663           .9327         .8706         .8131         .7599         .7107         .6651         .6227           .9235         .8535         .7894         .7307         .6768         .6274         .5820           .9143         .8368         .7664         .7026         .6446         .5919         .5439           .9053         .8203         .7441         .6756         .6139         .5584         .5083           .8963         .8043         .7224         .6496         .5847         .5268         .4751           .8787         .7730         <	.9901         .9804         .9709         .9615         .9524         .9434         .9346         .9259           .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573           .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938           .9610         .9238         .8885         .8548         .8227         .7921         .7629         .7350           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302           .9327         .8706         .8131         .7599         .7107         .6651         .6227         .5835           .9323         .8535         .7894         .7307         .6768         .6274         .5820         .5403           .9143         .8368         .7664         .7026         .6446         .5919         .5439         .5002           .9053         .8203         .7441         .6756         .6139         .5584         .5083         .4632	.9901         .9804         .9709         .9615         .9524         .9434         .9346         .9259         .9174           .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417           .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722           .9610         .9238         .8885         .8548         .8227         .7921         .7629         .7350         .7084           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963           .9327         .8706         .8131         .7599         .7107         .6661         .6227         .5835         .5470           .9143         .8368         .7664         .7026         .6446         .5919         .5439         .5002         .4604           .9053         .8203         .7441         .6756         .6139         .5584         .5083         .4632         .4224	9901         ,9804         ,9709         ,9615         ,9524         ,9434         ,9346         ,9259         ,9174         ,9091           ,9803         ,9612         ,9426         ,9246         ,9070         ,8900         ,8734         ,8573         ,8417         ,8264           ,9706         ,9423         ,9151         ,8890         ,8638         ,8396         ,8163         ,7938         ,7722         ,7513           ,9610         ,9238         ,8885         ,8548         ,8227         ,7921         ,7629         ,7350         7064         ,6830           ,9515         ,9057         ,8626         ,8219         ,7835         ,7473         ,7130         ,6806         ,6499         ,6209           ,9420         ,8880         ,8375         ,7903         ,7462         ,7050         ,6663         ,6302         ,5963         ,5645           ,9327         ,8706         ,8131         ,7599         ,7107         ,6651         ,6227         ,5835         ,5470         ,5132           ,9327         ,8706         ,8134         ,7307         ,6768         ,6274         ,5820         ,5403         ,5019         ,4664           ,9143         ,8368	9901         9804         9709         9615         9524         9434         ,9346         ,9259         ,9174         ,9091         ,8929           ,9803         ,9612         ,9426         ,9246         ,9070         ,8900         ,8734         ,8573         ,8417         ,8264         ,7972           ,9706         ,9423         ,9151         ,8890         ,8638         ,8396         ,8163         ,7938         ,7722         ,7513         ,7118           ,9610         ,9238         ,8885         ,8548         ,8227         ,7921         ,7629         ,7350         ,7064         ,6830         ,6355           ,9515         ,9057         ,8626         ,8219         ,7835         ,7473         ,7130         ,6806         ,6499         ,6209         ,5674           ,9420         ,8880         ,8375         ,7903         ,7462         ,7050         ,6663         ,6302         ,5963         ,5645         ,5066           ,9327         ,8706         ,8131         ,7599         ,7107         ,6651         ,6227         ,5835         ,5470         ,5132         ,4523           ,9143         ,8368         ,7664         ,7026         ,6446         ,5919	.9901         .9804         .9709         .9615         .9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .9610         .9238         .8885         .8548         .8227         .7921         .7629         .7350         .7084         .6830         .6355         .5921         .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5645         .5066         .4556         .9327         .8706         .8131         .7599         .7107         .6651         .6227         .5835         .5470         .5132         .4523         .3996         .9143         .8368         .7664         .70	.9901         .9804         .9709         .9615         .9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .8696           .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561           .9706         .9423         .9151         .8690         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .6575           .9610         .9238         .8885         .8548         .8227         .7921         .7629         .7350         .7084         .6830         .6355         .5921         .5718           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194         .4972           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5645         .5066         .4556         .4323           .9327         .8706         .8131         .75599         .7107 <td< td=""><td>9901         ,9804         ,9709         ,9615         ,9524         ,9434         ,9346         ,9259         ,9174         ,9091         ,8929         ,8772         ,8696         ,8621           ,9803         ,9612         ,9426         ,9246         ,9070         ,8900         ,8734         ,8573         ,8417         ,8264         ,7972         ,7695         ,7561         ,7432           ,9706         ,9423         ,9151         ,8890         ,8638         ,8396         ,8163         ,7938         ,7722         ,7513         ,7118         ,6750         ,6575         ,6407           ,9610         ,9238         ,8885         ,8548         ,8227         ,7921         ,7629         ,7350         ,7084         ,6830         ,6335         ,5921         ,5718         ,5523           ,9515         ,9057         ,8626         ,8219         ,7835         ,7473         ,7130         ,6866         ,6499         ,6209         ,5674         ,5194         ,4972         ,4761           ,9420         ,8880         ,8375         ,7903         ,7462         ,7050         ,6663         ,6302         ,5963         ,5645         ,5066         ,4556         ,4323         ,4104</td><td>9901         9804         9709         9615         9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .8696         .8621         .8475           .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182           .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194         .4972         .4761         .4371           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5645         .5066         .4556         .4323         .4104         .3704           .9327         .8706         .8131         .7599         .7107         .6663         .6227         .5835         .5470         .</td><td>9901         9804         9709         9615         .9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .8696         .8621         .8475         .8333         .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182         .6944           .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086         .5787           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .5666         .6499         .6209         .5674         .5194         .4761         .4371         .4019           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5666         .4556         .4323         .4104         .3704         .3494           .9225         .8505         .7894         .7307         .6661         .6227         .5835</td><td>9901         9804         9709         9615         9524         9434         9346         9259         9174         9091         8929         8772         8696         8621         8475         8333         8065           9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182         .6944         .6504           .9706         .9423         .9151         .8890         .8638         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086         .5787         .5245           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194         .4972         .4761         .3711         .4019         .3411           .9327         .8706         .8131         .7599         .7107         .6651         .6227         .5835         .5470         .5132         .4523         .3996         .3759         .3538         .3139         .2791         .2218           .9232</td><td>9901 9804 9709 9615 9524 9434 9346 9259 9174 9991 8929 8772 8696 8621 8475 8333 8065 7813 9803 9612 9426 9246 9700 8890 8734 8573 8417 8264 7972 7695 7561 7432 7182 6944 6504 6104 9706 9423 9151 88890 8638 8996 8163 73938 77722 7513 7118 6750 6575 6407 8006 5787 5245 4768 97610 9238 88885 8548 8227 7921 7629 7350 7084 6830 6355 5921 5718 5523 5158 4823 4230 3725 9515 9057 8626 8219 7835 7473 7130 6806 6499 6209 5674 5194 4972 4761 4371 4019 3411 2910 9420 8880 8375 7903 7462 7050 6663 6302 5963 5470 5132 4523 3996 3759 3538 3139 2791 2218 11776 9235 8535 7894 7307 6768 6274 5820 5403 5019 4665 4039 3506 3269 3050 2660 2326 1789 1388 9143 8823 7644 6546 5919 5502 4604 4241 3606 3075 2843 2630 2255 1938 1443 1084 9803 7441 6756 6139 5584 5083 4632 4224 3855 3220 2697 2472 2267 1911 1615 1164 0847 8874 7885 7014 6246 5568 4970 4440 3971 3555 3186 2567 2076 1869 1869 1865 1372 1122 0757 0517 8874 7780 6419 5553 4810 4173 3624 3152 2745 2284 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 7740 6449 6449 1874 6765 6410 5775 5051 4423 3876 3405 2992 2633 2046 1597 1413 1252 0985 0979 0492 0316 8613 7740 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 7742 6466 5753 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 8548 8574 8548 8548 8574 8548 8548</td><td>9901 9804 9709 9615 9524 9434 9346 9359 9174 9991 8929 8772 8696 8621 8475 8333 8065 7813 7576 9803 9612 9426 9246 9070 8900 8734 8573 8417 8264 7972 7695 7561 7432 7182 6944 6504 6104 5739 9706 9423 9151 8890 8638 8396 8163 7938 7722 7513 7718 6750 6575 6407 8086 5787 5245 4768 4339 9510 9928 8885 8548 8227 7921 7629 7530 7084 6830 6355 5921 5718 57523 5158 4823 4230 3725 3294 9515 9057 8626 8219 7835 7473 7130 6806 6499 6209 5674 5194 4972 4761 4371 4019 3411 2910 2495 9927 8706 8131 7599 7107 6651 6227 5835 5470 5132 4523 3996 3759 3538 3139 2791 2218 11776 1432 9235 8535 7894 7307 6768 6274 5893 5002 4604 4241 3606 3075 2843 2630 2255 1938 1443 1084 0822 9053 8203 7441 6756 6139 5584 5083 4632 4224 3855 3220 2697 2472 2267 1911 1615 1164 0847 0623 8963 8043 7224 6496 5580 4702 4440 3971 4352 226 2897 2472 2267 1911 1615 1164 0847 0623 8864 7086 5303 4688 4150 3971 3562 2893 2043 1827 1401 1229 1079 0833 0649 0397 0247 0155 8644 7142 6050 5134 4363 3714 3166 2703 2914 2219 1716 0354 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7789 6411 5775 5551 4423 3878 3495 2792 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7700 7579 6611 5775 5551 4423 3878 3405 2992 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7709 5551 4423 3878 3405 2992 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7799 0492 0316 0205 0514 0450 0514 0450 0514 0509 0006 0451 0258 0150 0008 0007 0007 0007 0007 0007 0007 00</td></td<>	9901         ,9804         ,9709         ,9615         ,9524         ,9434         ,9346         ,9259         ,9174         ,9091         ,8929         ,8772         ,8696         ,8621           ,9803         ,9612         ,9426         ,9246         ,9070         ,8900         ,8734         ,8573         ,8417         ,8264         ,7972         ,7695         ,7561         ,7432           ,9706         ,9423         ,9151         ,8890         ,8638         ,8396         ,8163         ,7938         ,7722         ,7513         ,7118         ,6750         ,6575         ,6407           ,9610         ,9238         ,8885         ,8548         ,8227         ,7921         ,7629         ,7350         ,7084         ,6830         ,6335         ,5921         ,5718         ,5523           ,9515         ,9057         ,8626         ,8219         ,7835         ,7473         ,7130         ,6866         ,6499         ,6209         ,5674         ,5194         ,4972         ,4761           ,9420         ,8880         ,8375         ,7903         ,7462         ,7050         ,6663         ,6302         ,5963         ,5645         ,5066         ,4556         ,4323         ,4104	9901         9804         9709         9615         9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .8696         .8621         .8475           .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182           .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194         .4972         .4761         .4371           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5645         .5066         .4556         .4323         .4104         .3704           .9327         .8706         .8131         .7599         .7107         .6663         .6227         .5835         .5470         .	9901         9804         9709         9615         .9524         .9434         .9346         .9259         .9174         .9091         .8929         .8772         .8696         .8621         .8475         .8333         .9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182         .6944           .9706         .9423         .9151         .8890         .8638         .8396         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086         .5787           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .5666         .6499         .6209         .5674         .5194         .4761         .4371         .4019           .9420         .8880         .8375         .7903         .7462         .7050         .6663         .6302         .5963         .5666         .4556         .4323         .4104         .3704         .3494           .9225         .8505         .7894         .7307         .6661         .6227         .5835	9901         9804         9709         9615         9524         9434         9346         9259         9174         9091         8929         8772         8696         8621         8475         8333         8065           9803         .9612         .9426         .9246         .9070         .8900         .8734         .8573         .8417         .8264         .7972         .7695         .7561         .7432         .7182         .6944         .6504           .9706         .9423         .9151         .8890         .8638         .8163         .7938         .7722         .7513         .7118         .6750         .6575         .6407         .6086         .5787         .5245           .9515         .9057         .8626         .8219         .7835         .7473         .7130         .6806         .6499         .6209         .5674         .5194         .4972         .4761         .3711         .4019         .3411           .9327         .8706         .8131         .7599         .7107         .6651         .6227         .5835         .5470         .5132         .4523         .3996         .3759         .3538         .3139         .2791         .2218           .9232	9901 9804 9709 9615 9524 9434 9346 9259 9174 9991 8929 8772 8696 8621 8475 8333 8065 7813 9803 9612 9426 9246 9700 8890 8734 8573 8417 8264 7972 7695 7561 7432 7182 6944 6504 6104 9706 9423 9151 88890 8638 8996 8163 73938 77722 7513 7118 6750 6575 6407 8006 5787 5245 4768 97610 9238 88885 8548 8227 7921 7629 7350 7084 6830 6355 5921 5718 5523 5158 4823 4230 3725 9515 9057 8626 8219 7835 7473 7130 6806 6499 6209 5674 5194 4972 4761 4371 4019 3411 2910 9420 8880 8375 7903 7462 7050 6663 6302 5963 5470 5132 4523 3996 3759 3538 3139 2791 2218 11776 9235 8535 7894 7307 6768 6274 5820 5403 5019 4665 4039 3506 3269 3050 2660 2326 1789 1388 9143 8823 7644 6546 5919 5502 4604 4241 3606 3075 2843 2630 2255 1938 1443 1084 9803 7441 6756 6139 5584 5083 4632 4224 3855 3220 2697 2472 2267 1911 1615 1164 0847 8874 7885 7014 6246 5568 4970 4440 3971 3555 3186 2567 2076 1869 1869 1865 1372 1122 0757 0517 8874 7780 6419 5553 4810 4173 3624 3152 2745 2284 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 7740 6449 6449 1874 6765 6410 5775 5051 4423 3876 3405 2992 2633 2046 1597 1413 1252 0985 0979 0492 0316 8613 7740 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 7742 6466 5753 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0835 0649 0397 0247 8524 8548 8548 8574 8548 8548 8574 8548 8548	9901 9804 9709 9615 9524 9434 9346 9359 9174 9991 8929 8772 8696 8621 8475 8333 8065 7813 7576 9803 9612 9426 9246 9070 8900 8734 8573 8417 8264 7972 7695 7561 7432 7182 6944 6504 6104 5739 9706 9423 9151 8890 8638 8396 8163 7938 7722 7513 7718 6750 6575 6407 8086 5787 5245 4768 4339 9510 9928 8885 8548 8227 7921 7629 7530 7084 6830 6355 5921 5718 57523 5158 4823 4230 3725 3294 9515 9057 8626 8219 7835 7473 7130 6806 6499 6209 5674 5194 4972 4761 4371 4019 3411 2910 2495 9927 8706 8131 7599 7107 6651 6227 5835 5470 5132 4523 3996 3759 3538 3139 2791 2218 11776 1432 9235 8535 7894 7307 6768 6274 5893 5002 4604 4241 3606 3075 2843 2630 2255 1938 1443 1084 0822 9053 8203 7441 6756 6139 5584 5083 4632 4224 3855 3220 2697 2472 2267 1911 1615 1164 0847 0623 8963 8043 7224 6496 5580 4702 4440 3971 4352 226 2897 2472 2267 1911 1615 1164 0847 0623 8864 7086 5303 4688 4150 3971 3562 2893 2043 1827 1401 1229 1079 0833 0649 0397 0247 0155 8644 7142 6050 5134 4363 3714 3166 2703 2914 2219 1716 0354 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7789 6411 5775 5551 4423 3878 3495 2792 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7700 7579 6611 5775 5551 4423 3878 3405 2992 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7709 5551 4423 3878 3405 2992 2633 2046 1597 1413 1252 0985 0797 0492 0316 0205 8613 7430 6419 5553 4810 4173 3624 3152 2745 2394 1827 1401 1229 1079 0833 0649 0397 0247 0155 8858 7799 0492 0316 0205 0514 0450 0514 0450 0514 0509 0006 0451 0258 0150 0008 0007 0007 0007 0007 0007 0007 00

\* The factor is zero to four decimal places

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

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

reumber of						- 1/4													
payments	1%	2%	3%	4%	5%	S 6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%
1	0.9901	0.9804	0.9709	0.9615	0.95	0.9434	0.9346	0.9259	0.9174	0.9091	0.8329	0.8772	0.8696	0.8621	0.8475	0.8333			
2	1.9704	1.9416	1.9135	1.8861	18594	1.8334	1,8080	1.7833	1.7591	1,7355	1.6901	1.6467	1.6257	1.6052			0.8065	0.7813	0.7576
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	1.5656	1.5278	1.4568	1.3916	1.3315
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872		3.2397	3.1699	3.0373	2.9137	2.8550	2.7982		2.1065	1.9813	1.8684	1.7663
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002			3.7908	3.6048	3.4331	3.3522	3.2743	2.6901 3.1272	2.5887 2.9906	2.4043	2.2410	2.0957
												0.1001	5.5522	3.2143	J. 1272	2.3300	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	3.5340
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	2.7394	2.5342
8	7.6517	7.3255	7.0197	, 6.7327	6.4632	6.2098	5.9713	5,7466	5,5348	5.3349	4.9676	4,6389	4.4873	4.3436	4.0776	3.8372	3.4212	3.0758	2.6775
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		2.7860
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5,6502		5.0183	4.8332	4.4941	4.0310	3.6819	3.1842 3.2689	2.8681
													0.0100	4.0002	7.7071	4.1323	3.0013	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	20776
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	2.9776
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		3.0133
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	3.4272	3.0404
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	3.4587 3.4834	3.0609
													5.5474	3.3733	3.0310	4.0733	4.0013	3.4634	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	3.0882
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	
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	4.0755	3.5386	3 1039
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	3.1090
														0.0200	0.001	4.0030	4,1103	3.5450	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
		22,3965									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		3.1242
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	3.5712	3.1250
60	44.9550	34.7609	27.6756	22.6235	18.9293	16.1614	14.0392	12.3766	11.0480	9.9672		7,1401	6.6651	6.2402	5 5553	4.9999	4.1667		3 1250
															5 5 5 5 5 5	4.5533	7.1007	3.3714	3 1230