École de gestion TELFER School of Management

LIÉE au LINKED with LEADERSHIP

Final Exam
Intermediate Financial Accounting I
Winter 2011
ADM2342

(SUGGESTED SOLUTIONS)

Name: _____ **ID#:** _____

Section: Monday & Thursday (day) ☐ **Thursday (evening)** ☐

Instructions:

- Write your name and student ID number above.
- Closed book exam.
- Turn off all cell phones.
- Answer Question 1's multiple-choice questions on the SCANTRON sheet provided.
- Answer Questions 2-5 in this booklet. Booklet is **not** to be removed from the examination room. You may not separate the pages.
- This examination "SUGGESTED SOLUTIONS" comprises **5** questions over 19 numbered pages.
- Limit your answer to the space provided. Blank sheets for rough work and supporting calculations are given at the end of each question.
- This exam will be marked out of 100 marks and is 3 hours long. You should budget approximately 1.8 minutes per mark. The exam is worth 52% of the overall course mark.
- Please do not ask the invigilator or the professor any questions, as they will not be answered. State reasonable assumptions, if you feel they are necessary.
- Present value tables are provided on pages 18/19.
- Language (non-electronic) dictionaries are allowed if approved by the professor.
- You ***must*** sign the Statement of Academic integrity on page 2 of this exam.

Question		Marks
1	20 x 1-mark multiple choice questions (Chapters 4 to 11)	**/20**
2: part 1	Gross profit method	**/6**
2: part 2	Accounting for purchase discounts	**/6**
2: part 3	Inventory cut-off	**/6**
3: part 1	Financial instruments classification	**/3**
3: part 2	Equity: FV/OCI	**/9**
3: part 3	Debt: FV/NI	**/9**
3: part 4	Equity method	**/9**
4: part 1	Cost at acquisition	**/8**
4: part 2	Cost at acquisition	**/8**
5: part 1	Revaluation model	**/8**
5: part 2	Disposition of assets	**/8**
TOTAL		**/100**

Statement of Academic Integrity
The Telfer School of Management does not condone academic fraud, an act by a student that may result in a false academic evaluation of that student or of another student. Without limiting the generality of this definition, academic fraud occurs when a student commits any of the following offences: plagiarism or cheating of any kind, use of books, notes, mathematical tables, dictionaries or other study aid unless an explicit written note to the contrary appears on the exam, to have in his/her possession cameras, radios (radios with head sets), tape recorders, pagers, cell phones, or any other communication device which has not been previously authorized in writing.

Statement to be signed by the student:
I have read the text on academic integrity and I pledge not to have committed or attempted to commit academic fraud in this examination.

Signed:_____

Note: an examination copy or booklet without that signed statement will not be graded and will receive an exam grade of zero.

QUESTION 1 (20 marks: 1 mark each)

Answer ALL parts to this question on the SCANTRON sheet provided. Each part is independent. The marker will not assess anything you write on this or the following page.

The solutions to the multiple choice questions are intentionally omitted from this document

The solutions to the multiple choice questions are intentionally omitted from this document

QUESTION 2 (18 marks)

Answer ALL parts to this question. Each part is independent.

PART 1: (6 marks)

Beringer Co. prepares monthly income statements. Inventory is counted only at year end; thus, month-end inventories must be estimated. All sales are made on account. The rate of mark-up on cost is 20%. The following information relates to the month of May.

Accounts receivable, May 1	$21,000
Accounts receivable, May 31	27,000
Collections of accounts during May	84,000
Inventory, May 1	47,000
Purchases during May	65,000

Required
Calculate the estimated cost of the inventory on May 31. (show all supporting calculations).

Collections of accounts	$ 84,000
Add accounts receivable, May 31	27,000
Deduct accounts receivable, May 1	(21,000)
Sales during May	$ 90,000

Inventory, May 1	$ 47,000
Purchases during May	65,000
Goods available	112,000
Cost of sales ($90,000 ÷ 120%)	(75,000)
Estimated cost of inventory, May 31	$ 37,000

Alternative approach (same answer):

GP rate based upon sales = 20% / 100 + 20% = 16.6667%
Therefore, estimated GP = .166667 x $90,000 = $15,000
Therefore, estimated CGS = $90,000 – $15,000 = $75,000
CGA = $47,000 + $65,000 = $112,000
Therefore, estimated ending inventory = $112,000 – $75,000 = $37,000

QUESTION 2 (18 marks) (continued)

PART 2: (6 marks)

Lapp Corp. purchased merchandise during 2010 on credit for $150,000; terms 2/10, n/30. All of the gross liability except $30,000 was paid within the discount period. The remainder was paid within the 30-day term. At the end of the annual accounting period, December 31, 2010, 90% of the merchandise had been sold and 10% remained in inventory. The company uses a periodic system.

Required
Assuming that the net method is used for recording purchases, prepare the entries for the purchase and two subsequent payments.

Purchases	147,000	
Accounts Payable		147,000
(To record the purchase at net amount: .98 × $150,000 = $147,000.)		
Accounts Payable	117,600	
Cash		117,600
(To record payment within the discount period: $150,000 – $30,000 = $120,000; .98 × $120,000 = $117,600.)		
Accounts Payable	29,400	
Purchase Discounts Lost	600	
Cash		30,000
(To record the final payment.)		

QUESTION 2 (18 marks) (continued)

PART 3: (6 marks)

Morgan Company sells laptop computers. The perpetual inventory was stated as $43,100 on the books at December 31, 2010. At the close of the year, a new approach for compiling inventory was used and apparently a satisfactory cut-off for preparation of financial statements was not made. Some events that occurred are as follows.

1. Units shipped to a customer January 2, 2011, costing $7,000 were included in inventory at December 31, 2010. The sale was recorded in 2011.
2. Units costing $17,000 received December 30, 2010, were recorded as received on January 2, 2011.
3. Units received during 2010 costing $5,300 were recorded twice in the inventory account.
4. Units shipped to a customer December 28, 2010, f.o.b. shipping point, which cost $11,000, were not received by the customer until January, 2011. The units were included in the ending inventory.
5. Units on hand that cost $5,600 were never recorded on the books.

Required
Calculate the correct inventory at December 31, 2010.

Inventory per books		$43,100
Add: Shipment received 12/30/10	$17,000	
Units on hand	5,600	22,600
		65,700
Deduct: Units recorded twice	5,300	
Units shipped 12/28/10	11,000	16,300
Correct inventory 12/31/10		$49,400

QUESTION 3 (30 marks)

Answer ALL parts to this question. Each part is independent.

PART 1: (3 marks)

1. A bond that will mature in four years was bought one month ago when the price dropped. As soon as the value increases, which is expected next month, it will be sold.

2. Ten percent of the outstanding shares of Farm Corp. were purchased. The company is planning on eventually getting a total of 30% of the outstanding shares.

3. Ten-year bonds were purchased this year. The bonds mature on January 1 of next year.

4. Bonds that will mature in five years are purchased. The company would like to hold them until they mature, but money has been tight recently and the bonds may need to be sold.

5. A bond that matures in 10 years was purchased with money that the company has set aside for an expansion project that is planned for 10 years from now.

6. Preferred shares were purchased for their constant dividend. The company is planning to hold the preferred shares for a long time.

Required
Each of the securities above is independent of the others and active quoted markets exist for the securities. Identify, in the table below, the best accounting model classification(s) [Amortized Cost; Cost, FV/NI; FV/OCI], according to IFRS 9 for each of the securities described above.

	IFRS 9	**ASPE (not asked in the exam)**
1.	**Fair value through net income (FV-NI)** security since the company's intent is to manage the changing fair values and sell the bonds as soon as the value increases. *	same
2.	**Fair value through net income (FV-NI** **or can opt to use the** **Fair value through other comprehensive income (FV-OCI) security**. [When the company acquires 20% or more, and if significant influence over Farm Corp. exists, the investment will be reclassified to an equity investment.	Fair value through net income (FV-NI). (ASPE does not have an FV-OCI option.)
3.	**Fair value through net income (FV-NI)** **or** **Amortized cost**	Amortized cost, unless the company chooses the fair value through net income (FV-NI) model option. (ASPE does not have an FV-OCI option.)
4.	**Fair value through net income (FV-NI) security**. (Under IFRS 9, FV-OCI investments normally will be limited to equity investments in other companies.*)	Amortized cost, unless the company chooses the fair value through net income (FV-NI) model option. (ASPE does not have a FV-OCI option.)
5.	**Cost/amortized cost model** security as it appears the company's intent is to manage the stated cash flows and hold the bonds until maturity.	Amortized cost, unless the company chooses the fair value through net income (FV-NI) model option.
6.	**Fair value through net income (FV-NI).**	Fair value through net income (FV-NI) assuming that the equity investment is quoted in an active market.

*** Note: these answers were correct in December 2011. But, IFRS has changed since that date: for the current answers to these situations see the suggested solution to Exercise 9-1 that is posted on BlackBoard Learn.**

QUESTION 3 (30 marks) (continued)

PART 2: (9 marks)

In September 2010 Jessup Corp. acquired 10,000 common shares in Gielow Corp. The investment represents 12% of the total common shares outstanding. It is *not* considered significant and was accounted for under the fair value to other comprehensive income [FV/OCI] model. After the adjustments at Jessup Corp.'s December 31, 2010 accounting year-end the balance in the Investment in Gielow Corp account was $200,000 and the balance in the AOCI account "Unrealized holding gain on Gielow Corp" was a credit of $12,625. Jessup sells the Gielow Co. shares on January 31, 2011 for $235,200.

Required
a) Prepare the entries to record the sale on January 31, 2011, using FV/OCI with recycling.
b) Prepare the entries to record the sale on January 31, 2011, using FV/OCI without recycling.

FV/OCI with recycling

Investment in Gielow Corp.....	35,200	
Holding gain on Gielow Corp (OCI)		35,200
Cash.....	235,200	
Investment in Gielow Corp		235,200
Holding gain on Gielow Corp (OCI)	47,825	
Gain on sale of Gielow Corp.....		47,825

(47,825 = 12,625 + 35,200)

Or

FV/OCI without recycling

Investment in Gielow Corp.....	35,200	
Holding gain on Gielow Corp (OCI)		35,200
Cash.....	235,200	
.....Investment in Gielow Corp		235,200
Holding gain on Gielow Corp (OCI)	47,825	
.....Retained Earnings		47,825

(47,825 = 12,625 + 35,200)

QUESTION 3 (30 marks) (continued)

PART 3: (9 marks)

On January 1, 2011, Houseman Company paid $108,425 to acquire $100,000 face value 8% bonds of Lamont Corporation to yield 6%. The bonds were dated January 1, 2011, and mature on December 31, 2015, with interest payable each January 1. The bonds had a fair value of $110,000 on December 31, 2011.

Required
Assuming the FV/NI model is applied, prepare the following entries in the books of Houseman:
(a) Acquisition of bonds on January 1, 2011
(b) The year-end adjusting entries at December 31, 2011
(c) The receipt of the first interest payment on January 1, 2012

(a) Acquisition of bonds on January 1, 2011

Investment in Lamont Corp Bonds	108,425	
Cash.....		108,425

(b) The year-end adjusting entries at December 31, 2011

(If using IFRS)

Interest receivable	8,000	
.....Investment Income (Lamont Corp Bonds)		8,000
Investment in Lamont Corp Bonds……	1,575	
Investment Income (Lamont Corp Bonds)		1,575
[1,575 = 110,000 – 108,425]		
Or		
Interest receivable	8,000	
Investment in Lamont Corp Bonds……	1,575	
Investment Income (Lamont Corp Bonds)		9,575
[9,575 = 8,000 + (110,000 – 108,425)]		

Or, if amortizing the $8,425 premium; this method is required by ASPE and, in addition to the above method, is permitted by IFRS)

Interest receivable	8,000	
Investment in Lamont Corp Bonds……		1,495
Interest Income (Lamont Corp Bonds)		6,505*
$100,000 x 8% = $8,000		
$108,425 x 6% = $6,505		
$1,495		
Investment in Lamont Corp Bonds……	3,070	
Gain on Investment in Lamont Corp Bonds		3,070*
[3,070 = 110,000 – (108,425 – 1,495)]		

*note: 6,505 + 3,070 = 9,575: thus, the same impact on the income statement.

(c) Receipt of first interest payment on Jan-1-2012

Cash.....	8,000	
Interest receivable		8,000

QUESTION 3 (30 marks) (continued)

PART 4: (9 marks)

On January 1, 2011, Jenna Limited purchased 2,500 shares (25%) of the common shares of Novotna Corp. for $355,000. Jenna uses the equity method to account for this investment. At the date of acquisition, the following additional information relates to the identifiable assets and liabilities of Novotna:

	Carrying Amount	Fair Value
Assets not subject to depreciation	$ 500,000	$ 500,000
Assets subject to depreciation (10 years remaining)	800,000	860,000
Total identifiable assets	1,300,000	1,360,000
Liabilities	100,000	100,000

During 2011 Novotna reported the following information on its income statement:

Income before discontinued operations	$200,000
Discontinued operations (net of tax)	70,000
Net income	270,000
Dividends declared and paid by Novotna during 2011	120,000

Required
Prepare all journal entries Jenna should make in 2011 regarding its investment in the Novotna shares.

(a) Investment in Novotna Corp. 355,000
Cash..... 355,000

(b) Cost of investment $355,000
Carrying amount
Assets $1,300,000
Liabilities 100,000
1,200,000
X 25% 300,000
Cost in excess of
share of carrying amount $ 55,000

Allocated
Assets subject to depreciation
[($860,000 – $800,000) X 25%] $15,000
Goodwill 40,000
$55,000

Cash ($120,000 X .25) 30,000
Investment in Novotna Corp. 30,000

Investment in Novotna Corp. 67,500
Investment Income (ordinary) 50,000**
Investment Income (disc. operations) 17,500**

**$200,000 X .25
**$70,000 X .25

Investment Income (ordinary) 1,500
Investment in Novotna Corp. 1,500

Undervalued depreciable assets ($15,000 ÷ 10) = $1,500
Goodwill is not amortized, but rather is tested on an annual basis for impairment.

QUESTION 4 (16 marks)

Answer ALL parts to this question. Each part is independent.

PART 1: (8 marks)

Macoon Corporation is a Toronto-based manufacturer of automobile parts. In early January 2011 the company acquired land and a building to be used as the company's new head office. Macoon issued a $2,000,000, five-year non-interest bearing note to the seller. Payment is to be made in five equal installments of $400,000 at the end of each year. As a result of a depressed real estate market, the fair value of the building cannot be readily determined. However, it has been ascertained that, given Macoon's credit rating and market conditions, an interest rate of 9% would properly reflect the substance and credit risk of the negotiated payment schedule.

Other information:

- One third of the total value of the acquisition is attributable to the land.
- The building is expected to have a useful life of 25 years.
- Throughout the year, the company incurred maintenance costs in the amount of $87,000.
- A parking lot was built at a cost of $100,000. The work was completed on July 1 and is expected to have a useful life of 10 years.
- The company uses straight-line depreciation for all its PP&E assets.

Required
Prepare all journal entries that are required to record the above events and transactions.

Land	518,620	
Building.....	1,037,240	
Note Payable		1,555,860

To record the acquisition of land and building
$400,000 x 3.88965 = $1,555,860
Land: $1,555,860 x 1/3 = $518,620
Building: $1,555,860 x 2/3 = $1,037,240

Maintenance expense	87,000	
Cash.....		87,000

To record maintenance costs.

Land improvements - parking lot.....	100,000	
Cash.....		100,000

Depreciation expense	46,490	
Accumulated depreciation - building		41,490
Accumulated depreciation - land improvements.....		5,000

To record annual depreciation
Building: $1,037,240 / 25 = $41,490
Land improvements: ($100,000 / 10) x 6/12 = $5,000

QUESTION 4 (16 marks) (continued)

PART 2: (8 marks)

On June 28, 2011, in relocating to a new town, Kerr Corp. purchased a property consisting of two hectares of land and an unused building for $225,000 plus taxes in arrears of $4,500. The company paid a real estate broker's commission of $12,000 and legal fees on the purchase transaction of $6,000. The closing statement indicated that the assessed values for tax purposes were $175,000 for the land and $35,000 for the building. Shortly after acquisition, the building was demolished at a cost of $24,000.

Kerr Corp. then entered into a $1.3-million fixed-price contract with Maliseet Builders, Inc. on August 1, 2011, for the construction of an office building on this site. The building was completed and occupied on April 29, 2012, as was a separate maintenance building that was constructed by Kerr's employees. Additional costs related to the property included:

Plans, specifications, and blueprints	$25,000
Architects' fees for design and supervision	82,000
Landscaping	42,000
Extras on contract for upgrading of windows	46,000
External signage on the property	23,000
Advertisements in newspaper and on television announcing opening of the building	10,600
Gala opening party for customers, suppliers, and friends of Kerr	18,800
Costs of internal direct labour and materials for maintenance building	67,000
Allocated plant overhead based on direct labour hours worked on maintenance building	10,000
Allocated cost of executive time spent on project	54,000
Interest costs on debt incurred to pay contractor's progress billings up to building completion	63,000
Interest costs on short-term loan to finance maintenance building costs	3,200

As an incentive for Kerr to locate and build in the town, the municipality agreed not to charge its normal building permit fees of approximately $36,000. This amount was included in the $1.3-million contract fee. The building and the maintenance building are estimated to have a 40-year life from their dates of completion and will be depreciated using the straight-line method.

Kerr has an April 30 year end, and the company accountant is currently analyzing the new Building account that was set up to capture all the expenditures and credits explained above that relate to the property.

Required

Prepare a schedule that identifies the costs that would be capitalized and included in the new Building account on the April 30, 2012 balance sheet, assuming the accountant wants to comply with ASPE, but tends to be very conservative in nature; in other words, she does not want to overstate income or assets. Briefly justify your calculations.

How would your answer change if Kerr were to comply with IFRS?

Kerr Corp.
Cost of Building
Conservative approach

Fixed-price contract	$1,300,000
Plans, specifications and blueprints	25,000
Architect's fees	82,000
Upgrading of windows	46,000
Internal direct labour and materials	67,000
Overhead based on direct labour hours	10,000
Less: Municipal government grant	(36,000)
Cost of building	$1,494,000

In this approach, conservative refers to expensing as many costs as possible rather than place them on the balance sheet as part of the building's cost for future depreciation. The building costs included direct costs of construction as well as direct, variable overhead. Fixed overhead (executive time of $54,000) was expensed directly. GAAP generally requires fixed overhead to be expensed in the construction of PP&E, however, some exceptions do exist. Interest costs were also expensed directly. Current private entity GAAP does not specify that interest costs on self-constructed assets must be capitalized but rather that the policy selected must be applied consistently.

This is different than the IFRS standards, in which case borrowing costs are more widely defined as "interest and other costs that an entity incurs in connection with the borrowing of funds" (ASPE is limited to interest costs), and IFRS requires capitalization of borrowing costs of a qualifying asset (ASPE allows the choice between capitalization and expensing).

QUESTION 5 (16 marks)

Answer ALL parts to this question. Each part is independent.

PART 1: (8 marks)

XYZ Limited is a publically accountable enterprise that adheres to IFRS. Its financial year-end is December 31. At the end of 2010 XYZ paid $110,000 to purchase machinery with an estimated 20 year useful life and $10,000 residual value.
The company has chosen to account for its machinery using the revaluation model, to employ straight-line depreciation, and to account for the balance in the accumulated depreciation account upon revaluation by using the 'netting' approach whereby the balance is eliminated.

In the years after acquisition the following events took place:

- A revaluation at the end of 2013 deemed the machinery to have a fair value of $86,500 and a residual value of $10,000.
- A revaluation at the end of 2016 deemed the machinery to have a fair value of $83,000 and a residual value of $10,000.

Required
Prepare all journal entries necessary for the machinery in each of the years 2010 to 2016.

End of Year		Debit	Credit
2010			
	Machinery account	110,000.00	
	Cash account		110,000.00
	To record the purchase of the assets at a cost of $110,000 cash.		
Annually, 2011 - 2012			
	Depreciation expense account	5,000.00	
	Accumulated Depreciation: Machinery account		5,000.00
	To record annual depreciation expense for 2011 - 2012.		
	5,000 = [110,000(carrying amount) -10,000(residual value)]/[20 years]		
2013			
	Depreciation expense account	5,000.00	
	Accumulated Depreciation: Machinery account		5,000.00
	To record depreciation expense for 2013.		
	5,000 = [100,000(carrying amount before the end-of-2013 revaluation) -10,000(revised residual value)]/[(20-2)(years)]		
2013			
	Accumulated Depreciation: Machinery account	15,000.00	
	Machinery account		15,000.00
	Revaluation loss on machinery account (income statement)	8,500.00	
	Machinery account		8,500.00
	To record the revaluation decrease at the end of 2013. Note that the company has chosen to account for the balance in the accumulated depreciation account by using the 'netting' approach whereby the balance is eliminated: (see IAS 16.35). The flowchart explaining this journal entry is on the REVALUATION1 screen.		
Annually, 2014 - 2015			
	Depreciation expense account	4,500.00	
	Accumulated Depreciation: Machinery account		4,500.00
	To record annual depreciation expense for 2014 - 2016.		
	4,500 = [86,500(carrying amount) -10,000(residual value)]/[(20-3)(years)]		
2016			
	Depreciation expense account	4,500.00	
	Accumulated Depreciation: Machinery account		4,500.00
	To record depreciation expense for 2016.		
	4,500 = [77,500(carrying amount before the end-of-2016 revaluation) -10,000(revised residual value)]/[(20-5)(years)]		
2016			
	Accumulated Depreciation: Machinery account	13,500.00	
	Machinery account		13,500.00
	Machinery account	10,000.00	
	Revaluation gain on machinery account (income statement)		8,500.00
	OCI - Revaluation surplus on machinery account		1,500.00
	To record the revaluation increase at the end of 2016. Note that the company has chosen to account for the balance in the accumulated depreciation account by using the 'netting' approach whereby the balance is eliminated: (see IAS 16.35). The flowchart explaining this journal entry is on the REVALUATION2 screen.		

QUESTION 5 (16 marks) (continued)

PART 2: (8 marks)

On December 31, 2011, Grey Inc. owns a machine with a carrying amount of $940,000. Depreciation is calculated at $60,000 per year on a straight-line basis. The original cost and accumulated depreciation for the machine at this date are as follows:

Cost	$1,300,000
Accumulated depreciation	$360,000

Required
A set of independent situations follows. For each independent situation, record the appropriate journal entry.

(a) A fire completely destroys the machine on August 31, 2012. An insurance settlement of $430,000 was received for this casualty. Assume the settlement was received immediately.

(b) On April 1, 2012, Grey sold the machine for $1,040,000 to Dwight Company.

(c) On July 31, 2012, the company donated this machine to the Dartmouth City Council. The machine's fair value at the time of the donation was estimated to be $1.1 million.

(a)	Depreciation Expense (8/12 X $60,000)	40,000	
	Accumulated Depreciation—Machine		40,000
	Loss on Disposal of Machine**	470,000	
	($1,300,000 – $400,000) – $430,000		
	Cash	430,000	
	Accumulated Depreciation—Machine	400,000*	
	Machine		1,300,000
	*($360,000 + $40,000)		
	** The loss could be classified as extraordinary under Canadian private entity GAAP, however, as IAS does not allow extraordinary items, it could be classified as unusual under IFRS.		
(b)	Depreciation Expense (3/12 X $60,000)	15,000	
	Accumulated Depreciation—Machine		15,000
	Cash	1,040,000	
	Accumulated Depreciation—Machine	375,000	
	($360,000 + $15,000)		
	Machine		1,300,000
	Gain on Sale of Machine		115,000*
	*$1,040,000 – ($1,300,000 – $375,000)		
(c)	Depreciation Expense (7/12 X $60,000)	35,000	
	Accumulated Depreciation—Machine		35,000
	Contribution (or Donation) Expense	1,100,000	
	Accumulated Depreciation—Machine	395,000	
	($360,000 + $35,000)		
	Machine		1,300,000
	Gain on Disposal of Machine		195,000*
	*$1,100,000 – ($1,300,000 – $395,000)		

Rough work
(will not be read by the marker)

Rough work
(will not be read by the marker)

Financial Tables

Table 2: PRESENT VALUE of $1.00 that is received in the future.

Period/Per	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
1	0.9900990	0.9803922	0.9708738	0.9615385	0.9523810	0.9433962	0.9345794	0.9259259	0.9174312	0.9090909	0.9009009	0.8928571
2	0.9802960	0.9611688	0.9425959	0.9245562	0.9070295	0.8899964	0.8734387	0.8573388	0.8416800	0.8264463	0.8116224	0.7971939
3	0.9705901	0.9423223	0.9151417	0.8889964	0.8638376	0.8396193	0.8162979	0.7938322	0.7721835	0.7513148	0.7311914	0.7117802
4	0.9609803	0.9238454	0.8884870	0.8548042	0.8227025	0.7920937	0.7628952	0.7350299	0.7084252	0.6830135	0.6587310	0.6355181
5	0.9514657	0.9057308	0.8626088	0.8219271	0.7835262	0.7472582	0.7129862	0.6805832	0.6499314	0.6209213	0.5934513	0.5674269
6	0.9420452	0.8879714	0.8374843	0.7903145	0.7462154	0.7049605	0.6663422	0.6301696	0.5962673	0.5644739	0.5346408	0.5066311
7	0.9327181	0.8705602	0.8130915	0.7599178	0.7106813	0.6650571	0.6227497	0.5834904	0.5470342	0.5131581	0.4816584	0.4523492
8	0.9234832	0.8534904	0.7894092	0.7306902	0.6768394	0.6274124	0.5820091	0.5402689	0.5018663	0.4665074	0.4339265	0.4038832
9	0.9143398	0.8367553	0.7664167	0.7025867	0.6446089	0.5918985	0.5439337	0.5002490	0.4604278	0.4240976	0.3909248	0.3606100
10	0.9052870	0.8203483	0.7440939	0.6755642	0.6139133	0.5583948	0.5083493	0.4631935	0.4224108	0.3855433	0.3521845	0.3219732
11	0.8963237	0.8042630	0.7224213	0.6495809	0.5846793	0.5267875	0.4750928	0.4288829	0.3875329	0.3504939	0.3172833	0.2874761
12	0.8874492	0.7884932	0.7013799	0.6245970	0.5568374	0.4969694	0.4440120	0.3971138	0.3555347	0.3186308	0.2858408	0.2566751
13	0.8786626	0.7730325	0.6809513	0.6005741	0.5303214	0.4688390	0.4149644	0.3676979	0.3261786	0.2896644	0.2575143	0.2291742
14	0.8699630	0.7578750	0.6611178	0.5774751	0.5050680	0.4423010	0.3878172	0.3404610	0.2992465	0.2633313	0.2319948	0.2046198
15	0.8613495	0.7430147	0.6418619	0.5552645	0.4810171	0.4172651	0.3624460	0.3152417	0.2745380	0.2393920	0.2090043	0.1826963
16	0.8528213	0.7284458	0.6231669	0.5339082	0.4581115	0.3936463	0.3387346	0.2918905	0.2518698	0.2176291	0.1882922	0.1631217
17	0.8443775	0.7141626	0.6050164	0.5133732	0.4362967	0.3713644	0.3165744	0.2702690	0.2310732	0.1978447	0.1696326	0.1456443
18	0.8360173	0.7001594	0.5873946	0.4936281	0.4155207	0.3503438	0.2958639	0.2502490	0.2119937	0.1798588	0.1528222	0.1300396
19	0.8277399	0.6864308	0.5702860	0.4746424	0.3957340	0.3305130	0.2765083	0.2317121	0.1944897	0.1635080	0.1376776	0.1161068
20	0.8195445	0.6729713	0.5536758	0.4563869	0.3768895	0.3118047	0.2584190	0.2145482	0.1784309	0.1486436	0.1240339	0.1036668
21	0.8114302	0.6597758	0.5375493	0.4388336	0.3589424	0.2941554	0.2415131	0.1986557	0.1636981	0.1351306	0.1117423	0.0925596
22	0.8033962	0.6468390	0.5218925	0.4219554	0.3418499	0.2775051	0.2257132	0.1839405	0.1501817	0.1228460	0.1006687	0.0826425
23	0.7954418	0.6341559	0.5066917	0.4057263	0.3255713	0.2617973	0.2109469	0.1703153	0.1377814	0.1116782	0.0906925	0.0737880
24	0.7875661	0.6217215	0.4919337	0.3901215	0.3100679	0.2469785	0.1971466	0.1576993	0.1264049	0.1015256	0.0817050	0.0658821
25	0.7797684	0.6095309	0.4776056	0.3751168	0.2953028	0.2329986	0.1842492	0.1460179	0.1159678	0.0922960	0.0736081	0.0588233
26	0.7720480	0.5975793	0.4636947	0.3606892	0.2812407	0.2198100	0.1721955	0.1352018	0.1063925	0.0839055	0.0663136	0.0525208
27	0.7644039	0.5858620	0.4501891	0.3468166	0.2678483	0.2073680	0.1609304	0.1251868	0.0976078	0.0762777	0.0597420	0.0468936
28	0.7568356	0.5743746	0.4370768	0.3334775	0.2550936	0.1956301	0.1504022	0.1159137	0.0895484	0.0693433	0.0538216	0.0418693
29	0.7493421	0.5631123	0.4243464	0.3206514	0.2429463	0.1845567	0.1405628	0.1073275	0.0821545	0.0630394	0.0484879	0.0373833
30	0.7419229	0.5520709	0.4119868	0.3083187	0.2313774	0.1741101	0.1313671	0.0993773	0.0753711	0.0573086	0.0436828	0.0333779
31	0.7345771	0.5412460	0.3999871	0.2964603	0.2203595	0.1642548	0.1227730	0.0920160	0.0691478	0.0520987	0.0393539	0.0298017
32	0.7273041	0.5306333	0.3883370	0.2850579	0.2098662	0.1549574	0.1147411	0.0852000	0.0634384	0.0473624	0.0354540	0.0266087
33	0.7201031	0.5202287	0.3770262	0.2740942	0.1998725	0.1461862	0.1072347	0.0788889	0.0582003	0.0430568	0.0319405	0.0237577
34	0.7129733	0.5100282	0.3660449	0.2635521	0.1903548	0.1379115	0.1002193	0.0730453	0.0533948	0.0391425	0.0287752	0.0212123
35	0.7059142	0.5000276	0.3553834	0.2534155	0.1812903	0.1301052	0.0936629	0.0676345	0.0489861	0.0355841	0.0259236	0.0189395
36	0.6989249	0.4902232	0.3450324	0.2436687	0.1726574	0.1227408	0.0875355	0.0626246	0.0449413	0.0323492	0.0233546	0.0169103
37	0.6920049	0.4806109	0.3349829	0.2342968	0.1644356	0.1157932	0.0818088	0.0579857	0.0412306	0.0294083	0.0210402	0.0150985
38	0.6851534	0.4711872	0.3252262	0.2252854	0.1566054	0.1092389	0.0764569	0.0536905	0.0378262	0.0267349	0.0189551	0.0134808
39	0.6783697	0.4619482	0.3157535	0.2166206	0.1491480	0.1030555	0.0714550	0.0497134	0.0347030	0.0243044	0.0170767	0.0120364
40	0.6716531	0.4528904	0.3065568	0.2082890	0.1420457	0.0972222	0.0667804	0.0460309	0.0318376	0.0220949	0.0153844	0.0107468

Table 4: PRESENT VALUE of Annuity of $1.00 in arrears.												
Period/Per	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
1	0.990099	0.980392	0.970874	0.961538	0.952381	0.943396	0.934579	0.925926	0.917431	0.909091	0.900901	0.892857
2	1.970395	1.941561	1.913470	1.886095	1.859410	1.833393	1.808018	1.783265	1.759111	1.735537	1.712523	1.690051
3	2.940985	2.883883	2.828611	2.775091	2.723248	2.673012	2.624316	2.577097	2.531295	2.486852	2.443715	2.401831
4	3.901966	3.807729	3.717098	3.629895	3.545951	3.465106	3.387211	3.312127	3.239720	3.169865	3.102446	3.037349
5	4.853431	4.713460	4.579707	4.451822	4.329477	4.212364	4.100197	3.992710	3.889651	3.790787	3.695897	3.604776
6	5.795476	5.601431	5.417191	5.242137	5.075692	4.917324	4.766540	4.622880	4.485919	4.355261	4.230538	4.111407
7	6.728195	6.471991	6.230283	6.002055	5.786373	5.582381	5.389289	5.206370	5.032953	4.868419	4.712196	4.563757
8	7.651678	7.325481	7.019692	6.732745	6.463213	6.209794	5.971299	5.746639	5.534819	5.334926	5.146123	4.967640
9	8.566018	8.162237	7.786109	7.435332	7.107822	6.801692	6.515232	6.246888	5.995247	5.759024	5.537048	5.328250
10	9.471305	8.982585	8.530203	8.110896	7.721735	7.360087	7.023582	6.710081	6.417658	6.144567	5.889232	5.650223
11	10.367628	9.786848	9.252624	8.760477	8.306414	7.886875	7.498674	7.138964	6.805191	6.495061	6.206515	5.937699
12	11.255077	10.575341	9.954004	9.385074	8.863252	8.383844	7.942686	7.536078	7.160725	6.813692	6.492356	6.194374
13	12.133740	11.348374	10.634955	9.985648	9.393573	8.852683	8.357651	7.903776	7.486904	7.103356	6.749870	6.423548
14	13.003703	12.106249	11.296073	10.563123	9.898641	9.294984	8.745468	8.244237	7.786150	7.366687	6.981865	6.628168
15	13.865053	12.849264	11.937935	11.118387	10.379658	9.712249	9.107914	8.559479	8.060688	7.606080	7.190870	6.810864
16	14.717874	13.577709	12.561102	11.652296	10.837770	10.105895	9.446649	8.851369	8.312558	7.823709	7.379162	6.973986
17	15.562251	14.291872	13.166118	12.165669	11.274066	10.477260	9.763223	9.121638	8.543631	8.021553	7.548794	7.119630
18	16.398269	14.992031	13.753513	12.659297	11.689587	10.827603	10.059087	9.371887	8.755625	8.201412	7.701617	7.249670
19	17.226008	15.678462	14.323799	13.133939	12.085321	11.158116	10.335595	9.603599	8.950115	8.364920	7.839294	7.365777
20	18.045553	16.351433	14.877475	13.590326	12.462210	11.469921	10.594014	9.818147	9.128546	8.513564	7.963328	7.469444
21	18.856983	17.011209	15.415024	14.029160	12.821153	11.764077	10.835527	10.016803	9.292244	8.648694	8.075070	7.562003
22	19.660379	17.658048	15.936917	14.451115	13.163003	12.041582	11.061240	10.200744	9.442425	8.771540	8.175739	7.644646
23	20.455821	18.292204	16.443608	14.856842	13.488574	12.303379	11.272187	10.371059	9.580207	8.883218	8.266432	7.718434
24	21.243387	18.913926	16.935542	15.246963	13.798642	12.550358	11.469334	10.528758	9.706612	8.984744	8.348137	7.784316
25	22.023156	19.523456	17.413148	15.622080	14.093945	12.783356	11.653583	10.674776	9.822580	9.077040	8.421745	7.843139
26	22.795204	20.121036	17.876842	15.982769	14.375185	13.003166	11.825779	10.809978	9.928972	9.160945	8.488058	7.895660
27	23.559608	20.706898	18.327031	16.329586	14.643034	13.210534	11.986709	10.935165	10.026580	9.237223	8.547800	7.942554
28	24.316443	21.281272	18.764108	16.663063	14.898127	13.406164	12.137111	11.051078	10.116128	9.306567	8.601622	7.984423
29	25.065785	21.844385	19.188455	16.983715	15.141074	13.590721	12.277674	11.158406	10.198283	9.369606	8.650110	8.021806
30	25.807708	22.396456	19.600441	17.292033	15.372451	13.764831	12.409041	11.257783	10.273654	9.426914	8.693793	8.055184
31	26.542285	22.937702	20.000428	17.588494	15.592811	13.929086	12.531814	11.349799	10.342802	9.479013	8.733146	8.084986
32	27.269589	23.468335	20.388766	17.873551	15.802677	14.084043	12.646555	11.434999	10.406240	9.526376	8.768600	8.111594
33	27.989693	23.988564	20.765792	18.147646	16.002549	14.230230	12.753790	11.513888	10.464441	9.569432	8.800541	8.135352
34	28.702666	24.498592	21.131837	18.411198	16.192904	14.368141	12.854009	11.586934	10.517835	9.608575	8.829316	8.156564
35	29.408580	24.998619	21.487220	18.664613	16.374194	14.498246	12.947672	11.654568	10.566821	9.644159	8.855240	8.175504
36	30.107505	25.488842	21.832252	18.908282	16.546852	14.620987	13.035208	11.717193	10.611763	9.676508	8.878594	8.192414
37	30.799510	25.969453	22.167235	19.142579	16.711287	14.736780	13.117017	11.775179	10.652993	9.705917	8.899635	8.207513
38	31.484663	26.440641	22.492462	19.367864	16.867893	14.846019	13.193473	11.828869	10.690820	9.732651	8.918590	8.220993
39	32.163033	26.902589	22.808215	19.584485	17.017041	14.949075	13.264928	11.878582	10.725523	9.756956	8.935666	8.233030
40	32.834686	27.355479	23.114772	19.792774	17.159086	15.046297	13.331709	11.924613	10.757360	9.779051	8.951051	8.243777