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Mid Term Exam (SUGGESTED SOLUTIONS)
Intermediate Financial Accounting II
Winter 2015
ADM3340 Section M

Name: _____ **ID#:** _____

INSTRUCTIONS

- Write your name and student ID number above. Display your student ID on your desk during the exam.
- Reminder: it is an offence to have a cell phone or any other communication device in your possession during this exam's three hours. (see the Statement of Academic integrity on page 2 of this exam).
- This examination "SUGGESTED SOLUTION" comprises **4** multi-part questions over **21** numbered pages.
- Answer all questions in this booklet.
- Booklet is **not** to be removed from the examination room. You may not separate the pages.
- Do not answer questions using a pencil or erasable pen: if you do you will forfeit the right to ask that your exam be remarked.
- 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 (for convenience) and is 2½ hours long. You should budget approximately **1.5** minutes per mark. The exam is worth 40% 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.
- This exam paper must remain stapled: do not take this exam paper apart.
- Present value tables are provided on pages 20 and 21.
- Language (non-electronic) dictionaries are allowed with the proctor's permission.
- You ***must*** sign the Statement of Academic integrity on page 2 of this exam.

	Question		Marks
Ch 12	1: part 1	Impairment testing, ASPE & IFRS.	/12
	1: part 2	Internally generated intangibles	/9
	1: part 3	Intangibles: definition	/2
Ch 13	2: part 1	Warranties and premium	/14
	2: part 2	ARO	/8
Ch 14	3: part 1	Bond liabilities: issuance	/10
	3: part 2	Bond liabilities: retirement	/12
	3: part 3	Bond liabilities: exchange	/13
Ch 15	4: part 1	Retained earnings	/5
	4: part 2	Treasury stock	/6
	4: part 3	Various	/9
	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 (23 marks)
Answer ALL parts to this question. Each part is independent.

PART 1: (12 marks)

At the end of 2014, Yuvraj Corporation owns a license with a remaining life of 10 years and a carrying amount of $530,000. Yuvraj expects undiscounted future cash flows from this licence to total $535,000. The licence's fair value is $475,000 and disposal costs are estimated to be nil. The licence's discounted cash flows (that is, value in use) are estimated to be $475,000.

Required (you must show all supporting calculations)

(a) Assume Yuvraj prepares financial statements in accordance with IFRS.
- i. Determine if the license is impaired at the end of 2014 and prepare any related entries that are necessary. (2 marks)
- ii. Assume the recoverable amount is calculated to be $450,000 at the end of 2015. Determine if the license is impaired at the end of 2015 and prepare any related entries that are necessary. (2 marks)
- iii. Explain how the answer to part (b) would change if the license's fair value is $500,000 at the end of 2015. (2 marks)

(b) Assume Yuvraj prepares financial statements in accordance with ASPE.
- i. Determine if the license is impaired at the end of 2014 and prepare any related entries that are necessary. (2 marks)
- ii. Assume the recoverable amount under ASPE is calculated to be $500,000 at the end of 2015. Determine if the license is impaired at the end of 2015 and prepare any related entries that are necessary. (2 marks)
- iii. Explain how the answer to part (b.ii) would change if the license's fair value is $500,000 at the end of 2015. (2 marks)

(a)(i) **Under IFRS, the recoverable amount is the higher of value in use and fair value less costs to sell (both of which are discounted amounts). In this case, the licence is impaired at the end of 2014 since:**

Recoverable amount of $475,000 < Carrying amount of $530,000.
The impairment loss of $55,000 would be recorded.

The journal entry under IFRS would be:

Dr. Loss on Impairment	**55,000**	
Cr. Accumulated Impairment Losses—Intangible Assets – Licences		**55,000**

After this j/e on 31/12/2014 the asset's carrying amount = $475,000 [=$530,000 - $55,000]

(a)(ii) **If the estimates used to determine the asset's value in use and fair value less costs to sell have changed, then a reversal of the impairment is recognized. The reversal amount, however, is limited when using the cost (rather than revaluation) model. The specific asset cannot be increased in value to more than what its carrying amount would have been, net of amortization, if the original impairment loss had never been recognized. The carrying amount would have been $530,000 - $53,000 = $477,000.**

Thus, in this case there would be a reversal since (i) the recoverable amount of $450,000 is less than $477,000 and (ii) the recoverable amount of $450,000 is greater than the carrying amount of $427,500*.

*** Carrying amount at end of 2015 = 475,000 – 47,500 [amortization 475,000/10] = $427,500**

Therefore carrying amount can be increased to $450,000.
Reversal = 450,000 – 427,500 = $22,500.

Accumulated Impairment Losses – Licences	**22,500**	
Recovery of Loss from Impairment		**22,500**

QUESTION 1 (23 marks) (continued)
Answer ALL parts to this question. Each part is independent.

PART 1: (12 marks)

(a)(iii) If the licence's fair value is $500,000 at the end of 2015, the recoverable amount at the end of 2015 would be $500,000 (since recoverable amount is the higher of value in use and fair value less costs to sell). However, the licence cannot be increased in value to more than what its carrying amount would have been, net of amortization, if the original impairment loss had never been recognized (i.e. $530,000 – $53,000 amortization = $477,000).

Therefore carrying amount can be increased to $477,000.
Reversal = $477,000 – $427,500 = $49,500.

Accumulated Impairment Losses – Licences	49,500	
Recovery of Loss from Impairment		49,500

(b)(i) Under ASPE, for a limited-life asset, the undiscounted future cash flows are compared to the carrying amount. In this case, there is no impairment loss under ASPE since:

Recoverable amount (undiscounted future cash flows) of $535,000 > Carrying amount of $530,000

(b)(ii) Recoverable amount (undiscounted future cash flows) of $500,000 > Carrying amount of $477,000 ($530,000 – $53,000 amortization) at the end of 2015, therefore there is no impairment loss under ASPE. In any case, reversal of impairment loss is not permitted under ASPE.

(b)(iii) The answer to part (b.ii) would not change if the licence's fair value is $500,000 because under ASPE, the impairment test compares carrying amount of the asset to undiscounted future cash flows. The impairment test is not affected by fair value of the licence.

QUESTION 1 (23 marks) (continued)
Answer ALL parts to this question. Each part is independent.

PART 2: (9 marks)

In 2014, Jayawardene Corp. spent $392,000 on a research project, but by the end of 2014 it was impossible to determine whether any benefit would come from it. Jayawardene prepares financial statements in accordance with IFRS.

Required

(a) Record the $392,000 costs in journal entry form. (2 marks)

(b) The research project is completed in 2015, and a successful patent is obtained. The research phase costs to complete the project are $71,000. The administrative and legal; expenses incurred in obtaining patent number 481-761-0092 on January 3, 2015 total $10,000. The patent has an expected useful life of five years. Jayawardene Corp. will now begin investigating applications that use or apply the knowledge obtained on this project. Record these costs in journal entry form. Also record patent amortization for a full year in 2015. (3 marks)

(c) In January 2016, the company successfully defended the patent in litigation at a cost of $12,400. The victory extended the patents to December 31, 2023. What is the journal entry to account for this cost? Also record patent amortization for a full year in 2016. (2 marks)

(d) By early September 2016, and at an additional cost of $101,000, Jayawardene Corp. had a product design that was technologically and financially feasible. Additional engineering and consulting costs of $66,000 were incurred in October 2016 to advance the design of the new product to the manufacturing stage. Record these costs in journal entry form. (2 marks)

(a)

Research and Development Expense	**392,000**	
Cash, Accts. Payable, etc.		**392,000**

Fiscal 2014: The $392,000 is a research and development cost that should be charged to R & D Expense and, if not separately disclosed on the income statement, total R & D Expense should be separately disclosed in the notes to the financial statements. These costs are not eligible for capitalization since the six development phase criteria for capitalization are not met.

(b) Fiscal 2015:

Research and Development Expense	**71,000**	
Cash, Accts. Payable, etc.		**71,000**
(To record research and development expense) Assuming the criteria are not fulfilled for the development phase		
Intangible Assets - Patents	**10,000**	
Cash, Accts. Payable, etc.		**10,000**
(To record legal and admin. costs incurred to obtain patent)		
Amortization Expense	**2,000**	
Accumulated Amortization – Intangible Assets - Patents		**2,000**
[To record one year's amortization expense ($10,000 ÷ 5 = $2,000)]		

(c) Fiscal 2016:

Intangible Assets - Patents	**12,400**	
Cash, Accts. Payable, etc.		**12,400**
(To record legal cost of successfully defending patent)		
Amortization Expense	**2,550**	
Accumulated Amortization – Intangible Assets - Patents		**2,550**
To record one year's amortization expense:		

$10,000 – $2,000 = $8,000;

$8,000 ÷ 8 =	**$1,000**
$12,400 ÷ 8 =	**1,550**
Amortization expense for 2016	**$2,550**

QUESTION 1 (23 marks) (continued)
Answer ALL parts to this question. Each part is independent.

PART 2: (9 marks) (continued)

The cost of defending the patent is capitalized because the defence was successful and because it extended the useful life of the patent.

(d) Pre Sept 2016:

Under IFRS, costs associated with the development of internally generated intangible assets are capitalized when the six specific criteria for capitalization are met in the development stage. As such, costs incurred before the future benefits are reasonably certain (i.e. before the six specific criteria for capitalization are met) must be expensed. The $101,000 must be expensed as it was incurred before the future benefits were reasonably certain (i.e. these expenditures helped to establish the existence of future benefits).

Research and Development Expense	**101,000**	
Cash, Accts. Payable, etc.....		**101,000**
(To record research and development phase costs)		

Post Sept 2016:

Costs incurred after the six specific criteria for capitalization are met, are capitalized. Therefore, assuming after incurring the $101,000 costs by early September that the company's intention and ability to generate future economic benefits could also be demonstrated, the $66,000 would be capitalized as development costs.

Intangible Assets - Development Costs	**66,000**	
Cash, Accts. Payable, etc.....		**66,000**
(To record costs meeting the capitalization criteria – to be		

Question 1 (23 marks) (continued)

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

PART 3: (2 marks)

Provide clear, concise answers for the following.
What are intangible assets, according to generally accepted accounting principles?

Solution (see also pages 737 & 742 in Kieso et al, 10th Can Ed.)

Intangible assets are assets that are:

1. individually identifiable (results from contractual or other legal rights, or can be separated or divided from the entity and sold, transferred, rented, or exchanged);
2. have a non-physical existence; and
3. are non-monetary in nature.

QUESTION 2 (22 marks)
Answer ALL parts to this question. Each part is independent.

PART 1: (14 marks)

Akmal Music limited (AML) carries a wide variety of musical instruments, sound reproduction equipment, recorded music, and sheet music. AML uses two sales promotion techniques- warranties and premiums- to attract customers.

Music instruments and sound equipment are sold with a one-year warranty for replacement of parts and labour. The estimated warranty cost, based on experience, is 2% of sales.

A premium is offered on the recorded and sheet music. Customers receive a coupon for each dollar spent on recorded music or sheet music. Customers may exchange 200 coupons plus $20 for a CD player. AML pays $34 for each CD player and estimates that 60% of the coupons given to customers will be redeemed.

AML's total sales for 2014 were $7.2 million: $5.4 million from musical instruments and sound reproduction equipment, and $1.8 million from recorded music and sheet music. Replacement parts and labour for warranty work totalled $164,000 during 2014. A total of 6,500 CD players used in the premium program were purchased during the year and there were 1.2 million coupons redeemed in 2014.

The expense approach is used by AML to account for the warranty and premium costs for financial reporting purposes. The balances in the accounts related to warranties and premiums on January 1, 2014, were:

Inventory **of** premiums	$39,950
Estimated liability for premiums	44,800
Warranty Liability	136,000

Required (you must show all supporting calculations)

AML is preparing its financial statements for the year ended December 31, 2014. Determine the amounts that will be shown on the 2014 financial statements for the following:

(a) Warranty expense (3 marks)

(b) Warranty liability (3 marks)

(c) Premium expense (3 marks)

(d) Inventory of premiums (3 marks)

(e) Estimated liability for premiums (2 marks)

(a)	**Sales of musical instruments and sound equipment**	**$5,400,000**
	Estimated warranty rate	**.02**
	Warranty expense for 2014	**$ 108,000**
(b)	**Warranty liability —1/1/14**	**$ 136,000**
	2014 warranty expense (Requirement 1)	**108,000**
	Subtotal	**244,000**
	Actual warranty costs during 2014	**164,000**
	Warranty liability —31/12/14	**$ 80,000**
(c)	**Coupons issued (1 coupon/$1 sale)**	**1,800,000**
	Estimated redemption rate	**.60**
	Estimated number of coupons to be redeemed	**1,080,000**
	Exchange rate (200 coupons for a CD player)	**÷ 200**
	Estimated number of CD players to be issued	**5,400**
	Net cost of CD players ($34 – $20)	**14**
	Premium expense for 2014	**$ 75,600**
(d)	**Inventory of premiums—1/1/14**	**$ 39,950**
	Premium CD players purchased during 2014 (6,500 X $34)	**221,000**
	Premium CD players available	**260,950**
	Premium CD players exchanged for coupons during 2014 (1,200,000/200 X $34)	**$ 204,000**
	Inventory of premiums—31/12/14	**$ 56,950**

QUESTION 2 (22 marks)
Answer ALL parts to this question. Each part is independent.
PART 1: (14 marks)

(e)	**Estimated liability for premiums—1/1/14**	**$ 44,800**
	2014 premium expense (Requirement 3)	**75,600**
	Subtotal	**120,400**
	Actual redemptions during 2014 [1,200,000/200 X ($34 – $20)]	**84,000**
	Estimated liability for premiums—31/12/14	**$ 36,400**

QUESTION 2 (22 marks)
Answer ALL parts to this question. Each part is independent.

PART 2: (8 marks)

Healy Corp, a leader in the commercial cleaning industry, acquired and installed, at a total cost of $110,000 plus 15% HST, three underground tanks for the storage of hazardous liquid solutions needed in the cleaning process. The tanks were ready for use on February 28, 2014.

The provincial ministry of the environment regulates the use of such tanks and requires them to be disposed of after 10 years of use. Healy estimates that the cost of digging up and removing the tanks in 2024 will be $28,000. An appropriate interest or discount rate is 6%.

Required (you must show all supporting calculations)

Answer the following, assuming Healy follows IFRS and has a December 31 fiscal year end.

(a) Assuming straight-line depreciation and no residual value for the tanks at the end of their 10-year useful life, what is the balance in the asset storage tanks account, net of accumulated depreciation, at December 31, 2014? (4 marks)

(b) What is the balance of the asset retirement obligation liability at December 31, 2016, assuming there has been no change to the estimate of the final cost of disposal? (4 marks)

(a)

Cost of storage tanks	**$110,000**
Asset retirement cost ($28,000 X .55839)	
[PV of $28,000 (n=10, i=6%)]	**15,635**
Balance in asset account, Feb. 28, 2014	**$125,635**
Depreciation for 2014 ($125,635 ÷ 10 X 10/12):	**$10,470**
Presentation on Dec. 31, 2014 balance sheet:	
Asset cost	**$125,635**
Less: Accumulated depreciation	**(10,470)**
	$115,165

(b)

Asset retirement obligation (ARO),	
Feb. 28, 2014 (from above)	**$15,635**
2014 interest expense	
($15,635 X 6% X 10/12)	**782**
Balance of ARO, December 31, 2014	**16,417**
2015 interest expense	
($16,417 X 6%)	**985**
Balance of ARO, December 31, 2015	**17,402**
2016 interest expense	
($17,402 X 6%)	**1,044**
Balance of ARO, December 31, 2016	**$18,446**

QUESTION 3 (35 marks)
Answer ALL parts to this question. Each part is independent.

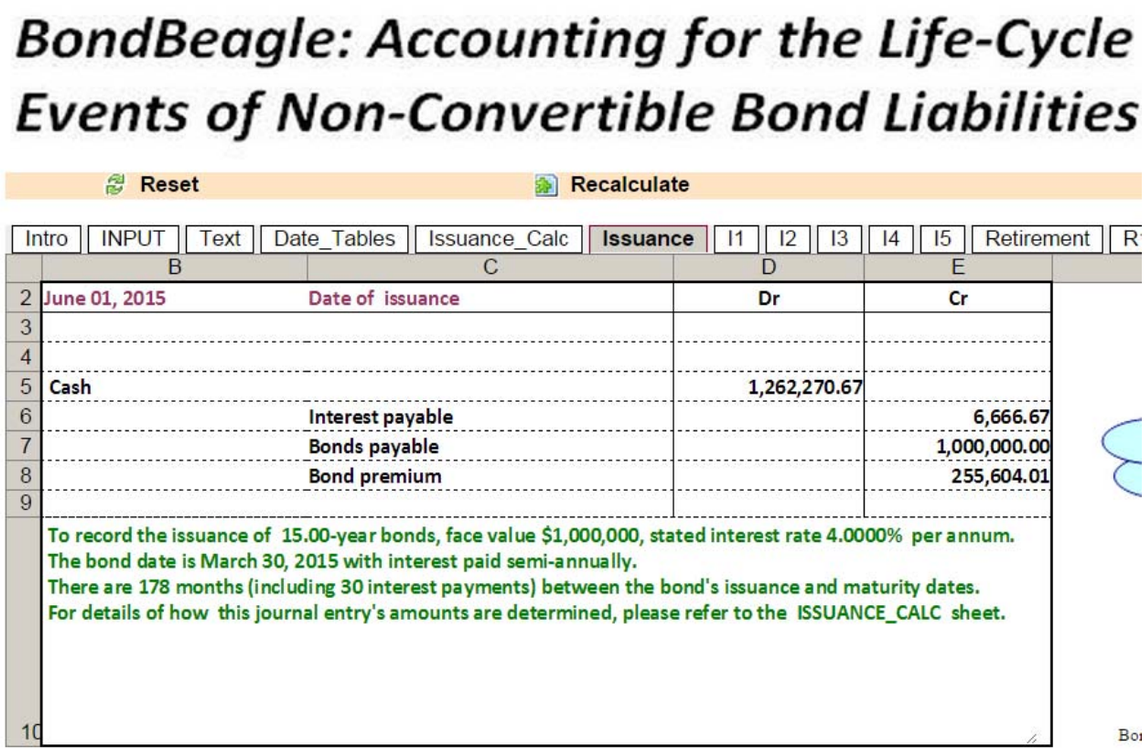
PART 1: (10 marks)

On June 1, 2015 BondBeagle Inc. issues $1,000,000 face value bonds. The bond date is March 30, 2015, and the bonds carry a coupon rate of 4% per year, payable semi-annually on March 31 and September 30. The bonds' maturity date is March 30, 2030. The bonds provide an annual yield of 2%.

BondBeagle Inc. uses the effective interest rate method to amortize any bond premium or discount. BondBeagle Inc.'s accounting year-end is August 31.

Required

Present the journal entry to record the issuance of the bonds: show all supporting calculations.



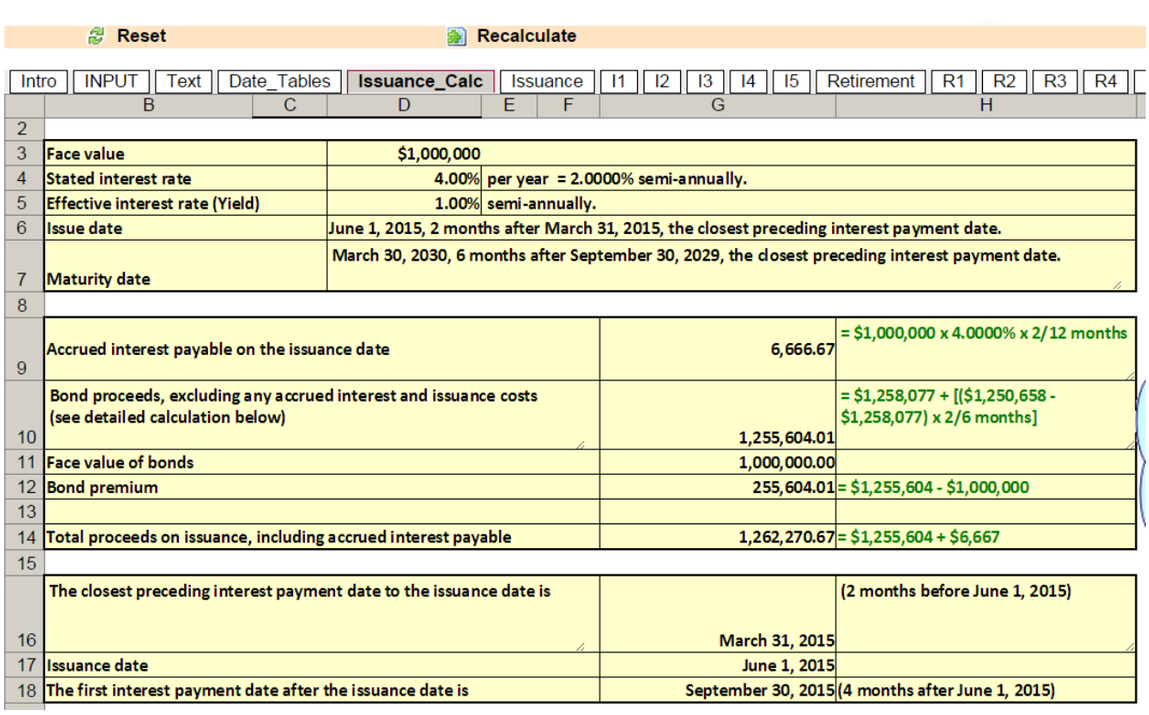
BondBeagle: Accounting for the Life-Cycle Events of Non-Convertible Bond Liabilities

Reset Recalculate

Intro | INPUT | Text | Date_Tables | Issuance_Calc | **Issuance** | I1 | I2 | I3 | I4 | I5 | Retirement | R

	B	C	D	E
2	June 01, 2015	Date of issuance	Dr	Cr
3				
4				
5	Cash		1,262,270.67	
6		Interest payable		6,666.67
7		Bonds payable		1,000,000.00
8		Bond premium		255,604.01
9				
10	To record the issuance of 15.00-year bonds, face value $1,000,000, stated interest rate 4.0000% per annum. The bond date is March 30, 2015 with interest paid semi-annually. There are 178 months (including 30 interest payments) between the bond's issuance and maturity dates. For details of how this journal entry's amounts are determined, please refer to the ISSUANCE_CALC sheet.			

The following table is not required in your solution:



Reset Recalculate

Intro | INPUT | Text | Date_Tables | **Issuance_Calc** | Issuance | I1 | I2 | I3 | I4 | I5 | Retirement | R1 | R2 | R3 | R4

	B	C	D	E	F	G	H
2							
3	Face value		$1,000,000				
4	Stated interest rate		4.00%	per year = 2.0000% semi-annually.			
5	Effective interest rate (Yield)		1.00%	semi-annually.			
6	Issue date		June 1, 2015, 2 months after March 31, 2015, the closest preceding interest payment date.				
7	Maturity date		March 30, 2030, 6 months after September 30, 2029, the closest preceding interest payment date.				
8							
9	Accrued interest payable on the issuance date					6,666.67	= $1,000,000 x 4.0000% x 2/12 months
10	Bond proceeds, excluding any accrued interest and issuance costs (see detailed calculation below)					1,255,604.01	= $1,258,077 + [($1,250,658 - $1,258,077) x 2/6 months]
11	Face value of bonds					1,000,000.00	
12	Bond premium					255,604.01	= $1,255,604 - $1,000,000
13							
14	Total proceeds on issuance, including accrued interest payable					1,262,270.67	= $1,255,604 + $6,667
15							
16	The closest preceding interest payment date to the issuance date is					March 31, 2015	(2 months before June 1, 2015)
17	Issuance date					June 1, 2015	
18	The first interest payment date after the issuance date is					September 30, 2015	(4 months after June 1, 2015)

	If the bonds were issued on:	
	March 31, 2015	September 30, 2015
	There would be 30 semi-annual interest payments (180 months) between March 31, 2015 and the maturity date, March 30, 2030	There would be 29 semi-annual interest payments (174 months) between September 30, 2015 and the maturity date, March 30, 2030
Present value of the bond's 30.00 semi-annual interest payments of $20,000 (= $1,000,000 x 4.0000%/2) at 1.0000% effective interest rate [$516,154 = 25.80770822 x $20,000]	516,154.16	
Present value of the maturity value of $1,000,000 at the end of 30.00 periods at 1.0000% effective interest rate [$741,923 = 0.74192292 x $1,000,000]	741,922.92	
Present value of the bond's 29.00 semi-annual interest payments of $20,000 (= $1,000,000 x 4.0000%/2) at 1.0000% effective interest rate [$501,316 = 25.0657853 x $20,000]		501,315.71
Present value of the maturity value of $1,000,000 at the end of 29.00 periods at 1.0000% effective interest rate [$749,342 = 0.74934215 x $1,000,000]		749,342.15
Total	1,258,077.08	1,250,657.85
Bond proceeds, excluding any accrued interest and issuance cost, on June 01, 2015 (which lies between March 31, 2015 and September 30, 2015). $1,255,604 = $1,258,077 + {[($1,250,658 - $1,258,077)/6months] x 2months}	1,255,604.01	

Question 3 (35 marks) (continued)
Answer ALL parts to this question. Each part is independent.

PART 2: (12 marks)

On June 1, 2015 BondBeagle Inc. issues $2,000,000 face value bonds. The bond date is April 30, 2015, and the bonds carry a coupon rate of 6% per year, payable semi-annually on April 30 and October 31. The bonds' maturity date is April 30, 2035. The bonds provide an annual yield of 8%.

BondBeagle Inc. uses the effective interest rate method to amortize any bond premium or discount. On September 30, 2030 BondBeagle Inc. retires 50% ($1,000,000 face value) of the bonds at 103%, excluding accrued interest. BondBeagle Inc.'s accounting year-end is July 31.

Required

Present all necessary journal entries for the retired bonds on September 30, 2030. Show all supporting calculations.

To answer this question you must first determine the amortized cost (carrying value) of the bond at May 1st, 2030 (shown as $1,837,782 below).

May 1st, 2030 to April 30, 2035: 10 interest pymt periods remaining periods to maturity.

$60,000 x 8.110957794 =		$ 486,654
$2,000,000 x 0.675564169 =		1,351,128
Amortized cost at May 1, 2030 =		$1,837,782 (rounded)

Intro | INPUT | Text | Date_Tables | Issuance_Calc | Issuance | I1 | I2 | I3 | I4 | I5 | Retirement | R1 | R2 | R3 | R4 | R5 | Maturity | Amor

Instructions:
Enter your data in the INPUT screen: all other screens are "Output screens".

	Date of retirement September 30, 2030	Dr	Cr	
4	Interest expense	12,251.88		= $1,837,782 (net bond liability at beginning of May 01, 2030) x 4.000000% (semi-annual yield) x 2/6 months x 50.0000% retired.
5	Bond discount		2,251.88	= $12,252 - $10,000
6	Interest payable		10,000.00	= $2,000,000 x 50.0000% retired x 2/12 months x 6.0000%
7				
8	To record interest expense incurred on 50.0000% of the bonds between July 31, 2030 (the closest preceding accounting year-end date to the retirement date) and September 30, 2030. Effective interest rate method. [Note: September 30, 2030 is neither an accounting year-end or a bond interest payment anniversary date.]			

12	Loss on retirement	105,479.26		= ($1,055,000 - $25,000 + $75,479) - ($1,000,000)
13	Interest payable	25,000.00		= $10,000 (see above journal entry) + $15,000 (= $2,000,000 x 50.0000% retired x 3/12 months x 6.0000% accrued at July 31, 2030) April 30, 2030 is the closest preceding interest payment date to the date of retirement.
14	Bond payable	1,000,000.00		= $2,000,000 x 50.0000% retired
15	Bond discount		75,479.26	= $162,218 x 50.00% (unamortized at beginning of May 01, 2030) - $5,630 [$5,630 = ($1,837,782 x 4.000000% yield x 5/6 x 50.00%) - ($2,000,000 x 3.0000% interest paid x 5/6 x 50.00%) amortization, April 30, 2030 to September 30, 2030 on the 50.00% retired)]. April 30, 2030 is the closest preceding interest payment date to the date of retirement.
16				
17	Cash		1,055,000.00	= $1,030,000 (=$2,000,000 x 50.0000% x 103.0000%) + $10,000 accrued (as appears in the journal entry above) + $15,000 accrued at July 31, 2030
18				
19	To record the retirement at 103.0000% of 20.00 year 6.0000% bonds, issued June 01, 2015, face value $1,000,000.			

Use Ctrl+ and Ctrl- to zoom in and out.

Question 3 (35 marks) (continued)
Answer ALL parts to this question. Each part is independent.

PART 2: (12 marks)

TABLE 2 RETIREMENT

Screen		
	April 30, 2030	The closest preceding interest payment date to the retirement date
	3	Number of months (rounded to the nearest month) between (a) the closest preceding interest payment date to the retirement date and (b) the closest preceding accounting year-end date to the retirement date
	July 31, 2030	The closest preceding accounting year-end date to the retirement date
	2	Number of months (rounded to the nearest month) between (a) the closest preceding accounting year-end date to the retirement date and (b) the date of retirement
Retirement	**September 30, 2030**	**Date of retirement**
	1	Number of months (rounded to the nearest whole month) between the retirement date and the first interest payment date after the retirement date
R1	October 31, 2030	The first interest payment date after the retirement date
	6	Number of months (rounded to the nearest month) between (a) the first interest payment date after the retirement date and (b) the second interest payment date after the retirement date
R2	April 30, 2031	The second interest payment date after the retirement date
	3	Number of months (rounded to the nearest month) between (a) the second interest payment date after the retirement date and (b) the first accounting year-end after the retirement date
R3	July 31, 2031	The first accounting year-end after the retirement date
	3	Number of months (rounded to the nearest month) between (a) the first accounting year-end after the retirement date and (b) the third interest payment date after the retirement date
R4	October 31, 2031	The third interest payment date after the retirement date
	6	Number of months (rounded to the nearest month) between (a) the third interest payment date after the retirement date and (b) the fourth interest payment date after the retirement date
R5	April 30, 2032	The fourth interest payment date after the retirement date

Question 3 (35 marks) (continued)
Answer ALL parts to this question. Each part is independent.

PART 3: (13 marks)

On January 1, 2011 Weak-Debtor-Inc issued a 7 year 6.00% $1,000,000 bond payable to Troika Bank. Interest payment dates are June 30 and December 31 and the bonds were issued to provide a semi-annual yield of 4.00%.

By December 2015 Weak-Debtor-Inc is in financial difficulties and is about to miss the December 31, 2015 interest payment. Weak-Debtor-Inc negotiates an arrangement with Troika Bank whereby Troika Bank agrees to waive the December 31, 2015 interest payment and to replace, effective December 31, 2015, the above bond with a 5 year $1,400,000 face value bond bearing 10.00% annual interest, payable semi-annually. Due to Weak-Debtor-Inc's precarious situation, lenders would normally seek a semi-annual return of 8.00% on this 'bail-out' financing.

Required

(a) Is this troubled debt restructuring a *settlement* (*substantial* in accordance with IFRS 9.3.3.2 and ASPE 3856.27) or a *modification* ? Support your answer with all necessary calculations.

(b) Answer either i or ii:

i If in part (a) you deem this restructuring to be a *settlement* provide any journal entries on Weak-Debtor-Inc's books that may be necessary on December 31, 2015.

ii If in part (a) you deem this restructuring to be a *modification*, what is the total of the interest expense that will be recognized by Weak-Debtor-Inc during the five year life of the $1,400,000 bond.

Derecognition of financial liabilities through (i) an exchange with an existing lender or (ii) modification of terms, in accordance with IFRS 9 and Canadian ASPE.

Reset Recalculate

TDR | **Steps1and2** | Step3_Substantial | Step3_NotSubstantial | IRR | IFRS_9 | ASPE_3856 | OtherApps

	A	B	C	D	E	F	G
1	**Step 1:**	**Compare the new financing arrangement and the old financial liability using the old financial liability's original effective interest rate.**					
2	Step 1(a):	Calculate the PV of the old 7 year bond at December 31, 2015, using the old bond's historic 4.00% semi-annual yield:					
3	PV Annuity, 4 semi-annual periods, 4.00%, $30,000:		$30,000	4.00%	4	3.629895224	$108,897
4	PV, 4 semi-annual periods, 4.00%, $1,000,000:		$1,000,000	4.00%	4	0.854804191	854,804
5							963,701
6	December 31, 2015 interest payable:						30,000
7	PV of the old financial liability owed at December 31, 2015, using its 4.00% original effective interest rate:						$993,701
8	The unamortized discount on the old financial liability:						$36,299
9							
10	Step 1(b)	Calculate the PV of the new 5 year financing arrangement at December 31, 2015, using the old bond's historic 4.00% semi-annual yield:					
11	PV Annuity, 10 semi-annual periods, 4.00%, $70,000:		$70,000	4.00%	10	8.110895779	$567,763
12	PV, 10 semi-annual periods, 4.00%, $1,400,000:		$1,400,000	4.00%	10	0.675564169	945,790
13	PV of the new financiing arrangement at December 31, 2015, using the old financial liability's 4.00% original effective interest rate:						$1,513,553
14							
15	**Step 2:**	**Apply the '10%' test to determine if the old financial liability and the new financial arrangement differ SUBSTANTIALLY from one another.**					
16	Difference ($993,701 - $1,513,553):						$519,851
17	Difference as a percentage of $993,701:						52.31%
18							
19	Conclusion: in accordance with IFRS 9.3.3.2, IFRS 9.B3.3.6, ASPE 3856.27, and ASPE 3856.A52 because the difference as a percentage of $993,701 is at least 10% (i) the old financial liability must be derecognized, (ii) a new financial liability recognized, and (iii) a gain/loss recorded.						

TDR | Steps1and2 | **Step3_Substantial** | Step3_NotSubstantial | IRR | IFRS_9 | ASPE_3856 | OtherApps

	A	B	C	D	E	F	G
1	**Step 3: when Step 2's 'difference' is SUBSTANTIAL [i.e., is at least 10% (this type of financial arrangement is called a 'settlement' by some textbooks)] and therefore, in accordance with IFRS 9.3.3.2 and ASPE 3856.27, requires (i) derecognition of the old financial liability, (ii) recognition of a new financial liability, and (iii) recognition of any gain/loss on the transaction.**						
2	Step 3(a): calculate the PV of the new 5 year financial arrangement at 31/12/2015, using the prevailing 8.00% semi-annual effective interest rate for financial liabilities with similar risk & maturity.						
3	PV Annuity, 10 semi-annual periods, 8.00%, $70,000:		$70,000	8.00%	10	6.710081399	$469,706
4	PV, 10 semi-annual periods, 8.00%, $1,400,000:		$1,400,000	8.00%	10	0.463193488	648,471
5	PV of the new bond:						$1,118,177
6	Face value of the new 5 year bond:						1,400,000
7	Therefore, the discount on the (new) bond is:						$281,823
8							
9	Step 3(b): record the 31/12/2015 journal entry required to (i) derecognize the old financial liability, (ii) recognize a new financial liability, and (iii) recognize any gain/loss on the transaction:						
10				Dr	Cr		
11	(Old) Bond payable			1,000,000			
12		(Old) Bond discount			36,299	[=$1,000,000 - $963,701].	
13	Interest payable (on Old Bond)			30,000			
14	(New) Bond discount			281,823			
15		(New) Bond payable			1,400,000		
16	Loss on bond restructuring			124,476		[= $993,701 - $1,118,177].	

Question 3 (35 marks) (continued)
Answer ALL parts to this question. Each part is independent.

<u>PART 3:</u> (13 marks) (continued)

Step 3(c): record the interest expense during the life of the new financial liability in the normal fashion:

Beginning of period	Face value (new bond)	Unamortized bond discount	Beginning of period amortized cost of new bond	CREDIT: 5.00% interest paid per 6 months	DEBIT: 8.00% interest expense per 6 months	CREDIT: amortized cost of the new bond	End of period amortized cost	End of period	
31-Dec-15	1,400,000	281,823	1,118,177	70,000	89,454	19,454	1,137,631	30-Jun-16	1
30-Jun-16	1,400,000	262,369	1,137,631	70,000	91,010	21,010	1,158,641	31-Dec-16	2
31-Dec-16	1,400,000	241,359	1,158,641	70,000	92,691	22,691	1,181,332	30-Jun-17	3
30-Jun-17	1,400,000	218,668	1,181,332	70,000	94,507	24,507	1,205,839	31-Dec-17	4
31-Dec-17	1,400,000	194,161	1,205,839	70,000	96,467	26,467	1,232,306	30-Jun-18	5
30-Jun-18	1,400,000	167,694	1,232,306	70,000	98,584	28,584	1,260,891	31-Dec-18	6
31-Dec-18	1,400,000	139,109	1,260,891	70,000	100,871	30,871	1,291,762	30-Jun-19	7
30-Jun-19	1,400,000	108,238	1,291,762	70,000	103,341	33,341	1,325,103	31-Dec-19	8
31-Dec-19	1,400,000	74,897	1,325,103	70,000	106,008	36,008	1,361,111	30-Jun-20	9
30-Jun-20	1,400,000	38,889	1,361,111	70,000	108,889	38,889	1,400,000	31-Dec-20	10

Totals	700,000	981,823	281,823

Total expense if the new financial arrangement results in the derecognition of the old financial liability and the recognition of a new liability (i.e., the new financial arrangement is deemed SUBSTANTIALLY different from the old) [$700,000 interest payments + $281,823 (new) bond discount]:	981,823
Total expense if the new financial arrangement is NOT deemed SUBSTANTIALLY different from the old and does not result in the derecognition of the old financial liability (see Row 53 on the 'Step3_NotSubstantial' sheet):	1,106,299
Difference. [Remember: this equals the loss that is recognized if the new financial arrangement is deemed SUBSTANTIALLY different from the old]:	-124,476

Not required in your answer.

QUESTION 4 (20 marks)
Answer ALL parts to this question. Each part is independent.

<u>PART 1:</u> (5 marks)

a) What are the items that increase retained earnings?

Items that increase retained earnings are:

- net income,
- prior period adjustments (error corrections),
- financial reorganization,
- certain changes in accounting principle, and
- AOCI amounts recycled when disposing of a *FV/OCI with recycling investment*.

b) What are the items that decrease retained earnings?

Items that decrease retained earnings are:

- net loss,
- cash, property and most stock dividends,
- some share retirement transactions,
- some treasury shares transactions,
- prior period adjustments (error corrections),
- certain changes in accounting principle, and
- AOCI amounts recycled when disposing of a *FV/OCI with recycling investment*.

Question 4 (20 marks) (continued)
Answer ALL parts to this question. Each part is independent.

<u>PART 2:</u> (6 marks)

LaFleur Corporation's last year-end balance sheet reported the following in its shareholders' equity section:

Common shares, no par, outstanding 5,000 shares	$115,000
Retained earnings	200,000

The following transactions occurred this year:
(a) Purchased 70 common shares at $30 per share, to be held as treasury shares.
(b) Sold 10 of the treasury shares at $16 per share.
(c) Sold the remaining treasury shares at $32 per share.

Required

Prepare LaFleur Corporation's journal entries for these transactions.

(a)	Treasury Shares (70 x $30)	2,100	
	Cash		2,100
(b)	Cash (10 x $16)	160	
	Retained Earnings……..	140	
	Treasury Shares (10 x $30)		300
(c)	Cash (60 x $32)	1,920	
	Treasury Shares (60 x $30)		1,800
	Contributed Surplus……..		120

Question 4 (20 marks) (continued)
Answer ALL parts to this question. Each part is independent.

PART 3: (9 marks)

Beijing Corp. reported the following amounts in the shareholders' equity section of its December 31, 2013 statement of financial position:

Preferred shares, $8 dividend (10,000 shares authorized, 2,000 shares issued)	$200,000
Common shares (100,000 authorized, 25,000 issued)	100,000
Contributed surplus	155,000
Retained earnings	250,000
Accumulated other comprehensive income	75,000
Total	$780,000

During 2014, the company had the following transactions that affect shareholders' equity.

1. January 4, 2014: Paid the annual 2013 $8 per share dividend on preferred shares and a $3 per share dividend on common shares. These dividends had been declared on December 31, 2013.
2. February 12, 2014: Purchased 3,700 shares of its own outstanding common shares for $35 per share and cancelled them.
3. January 1, 2014: Issued 1,000 preferred shares at $105 per share.
4. June 12, 2014: Declared a 10% stock dividend on the outstanding common shares when the shares were selling for $45 per share.
5. July 12, 2014: Issued the stock dividend.
6. December 14, 2014: Declared the annual 2014 $8 per share dividend on preferred shares and a $2 per share dividend on common shares. These dividends are payable in 2015.

The $155,000 contributed surplus arose from net excess of proceeds over cost on a previous cancellation of common shares. Total assets at December 31, 2013, were $940,000, and total assets at December 31, 2014, were $916,000. The company follows IFRS.

Required

Prepare journal entries to record the transactions above.

1.	Dividends Payable (Preferred - 2,000 X $8)	16,000	
	Dividends Payable (Common - 25,000 X $3)	75,000	
	Cash		91,000
2.	Common Shares	14,800	
	Contributed Surplus	114,700	
	Cash (3,700 X $35)		129,500
	($100,000 / 25,000 X 3,700 = $14,800)		
3.	Cash (1,000 X $105)	105,000	
	Preferred Shares		105,000
4.	Retained Earnings	95,850	
	Common Stock Dividends Distributable		95,850
	[(25,000 – 3,700) X 10% = 2,130 X $45]		
5.	Common Stock Dividends Distributable	95,850	
	Common Shares		95,850
6.	Retained Earnings	70,860	
	Dividends Payable (Preferred - 3,000 X $8)		24,000
	Dividends Payable [(Common - 25,000 – 3,700 + 2,130) X $2]		46,860

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