CHAPTER 14

LONG-TERM FINANCIAL LIABILITIES

ASSIGNMENT CLASSIFICATION TABLE

Topics	Brief Exercises	Exercises	Problems
1. Understand the nature of long-term debt.	1, 2	1, 2	1, 2
2. Understand how long-term debt is measured and accounted for.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13
3. Recognition and derecognition of debt and debt restructurings.	19, 20, 21	17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28	6, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
4. Presentation of long-term debt.	24	16, 18, 29, 30	2, 8, 10
5. Disclosure requirements.		31	9, 10
6. Long-term debt analysis.	25		7
7. Differences between IFRS and ASPE.			

NOTE: If your students are solving the end-of-chapter material using a financial calculator or an Excel spreadsheet as opposed to the PV tables, please note that there will be a difference in amounts. Excel and financial calculators yield a more precise result as opposed to PV tables. The amounts used for the preparation of journal entries in solutions have been prepared from the results of calculations arrived at using the PV tables.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E14-1	Features of long-term debt.	Simple	10-15
E14-2	Information related to various bond issues.	Simple	35-45
E14-3	Entries for bond transactions.	Simple	15-20
E14-4	Entries for bond transactions—effective interest.	Simple	15-20
E14-5	Entries for bond transactions—straight-line.	Simple	15-20
E14-6	Entries for noninterest-bearing debt.	Simple	15-20
E14-7	Imputation of interest.	Simple	15-20
E14-8	Instalment note.	Moderate	15-20
E14-9	Purchase of equipment with noninterest-bearing debt.	Moderate	15-20
E14-10	Purchase of equipment with noninterest-bearing debt.	Moderate	15-20
E14-11	Entries for bond transactions.	Moderate	15-20
E14-12	Amortization schedule—straight-line.	Simple	15-20
E14-13	Amortization schedule—effective interest.	Simple	15-20
E14-14	Determine proper amounts in account balances.	Moderate	15-20
E14-15	Government interest free loan	Moderate	15-20
E14-16	Entries and questions for bond transactions.	Moderate	20-30
E14-17	Entries for retirement of bonds.	Simple	10-15
E14-18	Entries for retirement and issuance of bonds – straight line.	Simple	15-20
E14-19	Entries for retirement and issuance of bonds – effective interest.	Complex	30-35
E14-20	Entry for retirement of bond; bond issue costs.	Moderate	20-25
E14-21	Entries for retirement and issuance of bonds.	Simple	15-20
E14-22	Impairments.	Moderate	15-25
E14-23	Settlement of debt.	Moderate	15-20
E14-24	Term modification debtor’s entries.	Moderate	20-30
E14-25	Term modification creditor’s entries.	Moderate	25-30
E14-26	Settlement debtor’s entries.	Moderate	25-30
E14-27	Settlement creditor’s entries.	Moderate	20-30
E14-28	Debtor/creditor entries for modification of troubled debt.	Moderate	20-25

ASSIGNMENT CHARACTERISTICS TABLE (CONTINUED)

Item	Description	Level of Difficulty	Time (minutes)
E14-29	Classification of liabilities	Simple	15-20
E14-30	Classification.	Simple	15-20
E14-31	Long-term debt disclosure.	Simple	10-15
P14-1	Entries for noninterest-bearing debt; payable in instalments.	Moderate	30-35
P14-2	Contrasting note terms.	Complex	50-60
P14-3	Analysis of amortization schedule and interest entries	Simple	15-20
P14-4	Issuance and retirement of bonds.	Moderate	25-30
P14-5	Comprehensive bond problem.	Complex	50-65
P14-6	Issuance of bonds between interest dates, straight-line, retirement.	Complex	30-35
P14-7	Entries for noninterest-bearing debt.	Simple	15-25
P14-8	Classification of accounts used in bond issuance	Moderate	55-65
P14-9	Issuance and retirement of bonds; income statement presentation.	Simple	15-20
P14-10	Comprehensive problem; issuance, classification, reporting.	Moderate	20-25
P14-11	Issuance of bonds between interest dates, effective interest, retirement.	Complex	30-35
P14-12	Entries for life cycle of bonds.	Moderate	20-25
P14-13	Bonds at discount and premium incl. partial redemption	Complex	45-50
P14-14	Loan impairment entries.	Moderate	30-40
P14-15	Debtor/creditor entries for continuation of troubled debt.	Moderate	15-25
P14-16	Restructure of note under different circumstances.	Complex	50-60
P14-17	Debtor/creditor entries for continuation of troubled debt.	Complex	40-50
P14-18	Entries for troubled debt restructuring.	Moderate	30-35
P14-19	Debtor/creditor entries for continuation of troubled debt with new effective interest.	Complex	40-50
P14-20	Legal versus in-substance defeasance	Moderate	15-20

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 14-1

(a) A bond's credit rating is a reflection of credit quality. The BBB- credit rating of the bond at the time of issuance reflected an assessment of the company's ability to pay the amounts that will be due on that specific bond. With four consecutive quarters of increasing losses and deteriorating financial position in 2017, and new competition in the industry, credit analysts may downgrade the bond's credit rating to below investment grade.

(b) The market closely monitors a bond's credit rating when determining the required yield and pricing of bonds at issuance and in periods after issuance. If the bond's credit rating is downgraded, the yield required by investors will likely increase, and the price of the bonds will likely decrease, to compensate the bondholder for the additional risk associated with that specific bond.

BRIEF EXERCISE 14-2

(a) Financing is generally obtained through three sources: borrowing, issuing shares, and/or using internally generated funds. Leverage (or using borrowed money to increase returns to shareholders) can maximize returns to shareholders, and the related interest paid is tax deductible. However, borrowed funds must be repaid and can increase liquidity and solvency risk. Issuing shares does not increase liquidity and solvency risk; however, it may result in dilution of ownership. Using internally generated funds may be appropriate if the company's business model is generating excess funds.

(b) Based on the information provided, borrowing is the most suitable source of financing for Jensen & Jensen. With a debt to total assets ratio of 55%, Dowty is underleveraged compared to similar size competitors operating in the same industry. This means that Jensen & Jensen may not be maximizing returns to shareholders, and that the company may be able to finance the expansion by borrowing and still maintain an acceptable level of liquidity and solvency risk. As a telecommunications equipment manufacturer, Jensen & Jensen operates in a capital intensive industry, and a lender may be able to structure the lending agreement in such a way as to secure the loan with the company's underlying tangible assets. Further, issuing shares is not ideal given the owners' desire to keep the company closely held.

BRIEF EXERCISE 14-3

1) Using tables:

Present value of the principal	
$500,000 X .37689	**$188,445**
Present value of the interest payments	
$27,500 X 12.46221	**342,711**
Issue price	**$531,156**

2) Using a financial calculator:

PV	**?**	**Yields $ 531,156**
I	**5%**	
N	**20**	
PMT	**$ (27,500)**	
FV	**$ (500,000)**	
Type	**0**	

3) Using Excel: = PV(rate,nper,pmt,fv,type)

BRIEF EXERCISE 14-4

(a)	**Cash**	**300,000**	
	Notes Payable		**300,000**
(b)	**Interest Expense**	**24,000**	
	Cash ($300,000 X 8%)		**24,000**

BRIEF EXERCISE 14-5

(a) 1) Using tables:

Present value of the principal	
$200,000 X .74409	**$148,818**
Present value of the interest payments	
$8,000 X 8.53020	**68,242**
Issue price	**$217,060**

2) Using a financial calculator:

PV	**?**	**Yields $ 217,060.41**
I	**3%**	
N	**10**	
PMT	**$ (8,000)**	
FV	**$ (200,000)**	
Type	**0**	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

(b)	**Cash**	**217,060**		
	Bonds Payable			**217,060**
(c)	**Interest Expense ($217,060 X 6% X 6/12)**	**6,512**		
	Bonds Payable ($8,000 – $6,512)	**1,488**		
	Cash ($200,000 X 8% X 6/12)			**8,000**
	Interest Expense [($217,060 – $1,488) X 6% X 6/12]	**6,467**		
	Bonds Payable ($8,000 – $6,467)	**1,533**		
	Cash ($200,000 X 8% X 6/12)			**8,000**

BRIEF EXERCISE 14-6

(a) 1) Using a financial calculator:

PV	$52,000	
I	?	Yields 15.09%
N	5	
PMT	$ 0	
FV	$ (105,000)	
Type	0	

2) Using Excel: =RATE(nper,pmt,pv, fv,type)

(b) Cash 52,000.00
Notes Payable 52,000.00

(c) Interest Expense ($52,000X 15.09%) 7,846.75
Notes Payable 7,846.75

(d)

Schedule of Discount Amortization
Effective Interest Method (15.09%)

Date		15.09% Effective Interest	Discount Amort.	Carrying Value
Jan. 1	2017			$52,000.00
Dec. 31	2017	$7,846.75	$7,846.75	59,846.75
Dec. 31	2018	9,030.81	9,030.81	68,877.56
Dec. 31	2019	10,393.55	10,393.55	79,271.11
Dec. 31	2020	11,961.93	11,961.93	91,233.04
Dec. 31	2021	13,766.96*	13,766.96	105,000.00
		$53,000.00	$53,000.00	

* rounded

BRIEF EXERCISE 14-7

(a)	**Equipment .....**	**38,912**	
	Notes Payable		**38,912**

(b)	**Interest Expense .....**	**4,280***	
	Cash.....		**2,500****
	Notes Payable		**1,780**

***($38,912 X 11.00% = $4,280)**

****($50,000 X 5% = $2,500)**

Using a financial calculator:

PV	**$ 38,912**	
I	**?**	**Yields 11.00% (rounded to 2 decimal places)**
N	**5**	
PMT	**$(2,500)**	
FV	**$ (50,000)**	
Type	**0**	

BRIEF EXERCISE 14-8

Cash	**200,000**	
Notes Payable		**176,448**

The difference between the present value (using an 8% discount rate) and proceeds, is recorded as unearned revenue, since Big Country agreed to provide cattle at a reduced price over the term of the note. The amount will be brought into revenue over the term of the note, as the cattle are provided to Little Town.

Excel formula: =PV(rate,nper,pmt,fv,type)

Using a financial calculator:

PV	**?**	**Yields $ 176,448**
I	**8%**	
N	**6**	
PMT	**0**	
FV	**$ (280,000)**	
Type	**0**	

BRIEF EXERCISE 14-9

The relevant interest rate to be imputed on the instalment note is the rate Pflug would pay at its bank of 11%

1) Using tables:

Using Ordinary Annuity Tables for 11% for two periods, the factor of 1.71252 is used and divided into the present value amount of $40,000 to arrive at the amount of the equal instalment payment of $23,357.39

2) Using a financial calculator:

PV	$ (40,000)	
I	11%	
N	2	
PMT	?	Yields $ (23,357.35)
FV	$ 0	
Type	0	

3) Using Excel: = PMT(rate,nper,pv,fv,type)

BRIEF EXERCISE 14-10

(a)	**Cash ($500,000 – $25,000) .....**	**475,000**	
	Bonds Payable		**475,000**

(b)	**Interest Expense ($40,000* + $2,500**) ....**	**42,500**	
	Bonds Payable		**2,500**
	Cash*.....		**40,000**

*** $500,000 X 8% = $40,000**
**** $25,000 issue cost X 1/10 = $2,500**

(c) When a note or bond is issued, it should be recognized at fair value adjusted by any directly attributable issue costs. However, note that where the liability will subsequently be measured at fair value (e.g., under the fair value option or because it is a derivative), the transaction costs should not be included in the initial measurement (i.e., the costs should be expensed) [*CPA Canada Handbook*, Part II, Section 3856.07 and IFRS 9.5.1.1].

(d) If the bonds were trading on the market for over their face value, this would imply that the bonds were not actually issued at face value, but rather that the interest rate paid on the bonds exceeds market rate, and thus, the bonds are trading at a premium. This reflects the fair value hierarchy, whereby observable market prices for identical assets and liabilities is first on the hierarchy, and thus, if fair value was being used to record these bonds, their value would be higher than what is currently recorded.

BRIEF EXERCISE 14-11

(a)	**Cash**	**300,000**	
	Bonds Payable		**300,000**
(b)	**Interest Expense**	**15,000**	
	Cash ($300,000 X 10% X 6/12)		**15,000**
(c)	**Interest Expense**	**15,000**	
	Interest Payable		**15,000**

BRIEF EXERCISE 14-12

(a)	**Cash ($300,000 X .98)**	**294,000**	
	Bonds Payable		**294,000**
(b)	**Interest Expense**	**15,600**	
	Cash ($300,000 X 10% X 6/12)		**15,000**
	Bonds Payable		**600**
	($6,000 X 1/5 X .5 = $600)		
(c)	**Interest Expense**	**15,600**	
	Interest Payable		**15,000**
	Bonds Payable		**600**

BRIEF EXERCISE 14-13

(a)	**Cash ($300,000 X 1.03 = $309,000).....**	**309,000**	
	Bonds Payable		**309,000**
(b)	**Interest Expense .....**	**14,100**	
	Bonds Payable ($9,000 X 1/5 X .5).....	**900**	
	Cash ($300,000 X 10% X 6/12)		**15,000**
(c)	**Interest Expense .....**	**14,100**	
	Bonds Payable	**900**	
	Interest Payable		**15,000**

BRIEF EXERCISE 14-14

(a)	**Cash.....**	**615,000**	
	Bonds Payable		**600,000**
	Interest Expense		**15,000**
	($600,000 X 6% X 5/12 = $1,500)		
(b)	**Interest Expense .....**	**18,000**	
	Cash		**18,000**
	($600,000 X 6% X 6/12 = $18,00)		
(c)	**Interest Expense .....**	**18,000**	
	Interest Payable		**18,000**

BRIEF EXERCISE 14-15

(a)	**Cash**	**559,229**	
	Bonds Payable		**559,229**
(b)	**Interest Expense**	**22,369**	
	Cash		**21,000**
	Bonds Payable		**1,369**
(c)	**Interest Expense**	**22,424**	
	Interest Payable		**21,000**
	Bonds Payable		**1,424**

(d) Using a Financial Calculator:

FV =	**(600,000)**	**Given**
n =	**20**	**10 years X 2**
PMT =	**(21,000)**	**Face X 7% X 6/12**
i =	**4.0%**	**Calculate**
PV =	**559,229**	**Given**

(e)

Schedule of Discount Amortization
Effective Interest Method (4%)

Date	3.5% Cash Paid	4.0% Interest Expense	Discount Amortized	Carrying Amount
Jan. 1 2017				$559,229.00
July 1 2017	$21,000.00	$22,369.16	$1,369.16	560,598.16
Jan. 1 2018	21,000.00	22,423.93	1,423.93	562,022.09
July 1 2018	21,000.00	22,480.89	1,480.89	563,502.97

BRIEF EXERCISE 14-16

(a)	Cash	644,632	
	Bonds Payable		644,632
(b)	Interest Expense	19,339	
	Bonds Payable	1,661	
	Cash		21,000
(c)	Interest Expense	19,289	
	Bonds Payable	1,711	
	Interest Payable		21,000

(d) Using a Financial Calculator:

FV =	(600,000)	Given
n =	20	10 years X 2
PMT =	(21,000)	Face X 7% X 6/12
i =	3.0%	Calculate
PV =	664,632	Given

(e)

Schedule of Premium Amortization
Effective Interest Method (3%)

Date		3.5% Cash Paid	3.0% Interest Expense	Premium Amortized	Carrying Amount
Jan. 1	2017				$644,632.00
July 1	2017	$21,000.00	$19,338.96	$1,661.04	642,970.96
Jan. 1	2018	21,000.00	19,289.13	1,710.87	641,260.09
July 1	2018	21,000.00	19,237.80	1,762.19	639,497.89

BRIEF EXERCISE 14-17

(a)	Cash	1,058,671	
	Bonds Payable		1,058,671
(b)	Interest Expense	5,293*	
	Bonds Payable	17,207	
	Cash		22,500**

*($1,058,671 x 2% x 3/12 = $5,293)
**($1,000,000 x 9% x 3/12 = $22,500)

BRIEF EXERCISE 14-18

(a)	Interest Expense ($1,000,000 X 7%).....	70,000	
	Cash		70,000
	Bonds Payable ($1,000,000 - $900,000)	100,000	
	Unrealized Gain or Loss		100,000

The unrealized gain or loss is recorded in net income.

(b)	Interest Expense ($1,000,000 X 7%).....	70,000	
	Cash		70,000
	Bonds Payable ($1,000,000 - $900,000)	100,000	
	Unrealized Gain or Loss - OCI.....		100,000

The unrealized gain or loss is recorded in other comprehensive income.

BRIEF EXERCISE 14-19

Bonds Payable ($800,000 + $6,500).....	**806,500**	
Cash ($800,000 X .97).....		**776,000**
Gain on Redemption of Bonds.....		**30,500**

BRIEF EXERCISE 14-20

This is a situation where a currently maturing liability (a current liability) at year end is expected to be refinanced on a long-term basis.

Under IFRS, this loan liability is required to be reported as a current liability on the December 31 financial statements because it was not refinanced by the reporting date. The only exception permitted would be if the refinancing that extends the repayment terms was done under an agreement that existed at December 31 and the decision about the refinancing is solely up to the discretion of the entity's management.

The ASPE standard, however, allows a little more flexibility. The maturing debt is required to be reported as a current liability unless it has been refinanced on a long-term basis or there is a non-cancellable agreement to do so before the financial statements are completed, and there is nothing that prevents completion of the refinancing. Because the entity's financial statements would not have been completed as soon as two days after the reporting date (December 31) when the new agreement was finalized, ASPE would permit the debt to be included with long-term liabilities.

BRIEF EXERCISE 14-21

Since the present value of the future cash flows of the new debt differs by an amount larger than 10% of the present value of the old debt, the renegotiated debt is considered a settlement. A gain/loss is recorded by Lawrence (debtor) and no interest is recorded by the debtor. This is not considered a modification of terms. The old debt is removed from the books of Lawrence with a gain/loss being recognized, and the new debt is recorded.

2017	**Notes Payable**	**100,000**	
	Gain on Restructuring of Debt		**27,603**
	Notes Payable		**72,397**
2018	**Interest Expense ($72,397 X .10)**	**7,240**	
	Notes Payable		**1,240**
	Cash (8% X $75,000)		**6,000**
2019	**Interest Expense**	**7,363**	
	Notes Payable		**1,363**
	Cash		**6,000**
	($72,397 + $1,240) X .10 = $7,363		
2019	**Notes Payable**	**75,000**	
	Cash		**75,000**

BRIEF EXERCISE 14-22

(a) Steinem's liquidity has improved. As a result of this transaction, the company's statement of financial position will show $1 million more cash, and $1 million less accounts receivable (a less liquid asset than cash).

(b) Steinem's statement of financial position will not show increased debt or equity as a result of this transaction. The cash was generated by the special purpose entity, which sold shares to its investors.

(c) This transaction is an example of off-balance-sheet financing.

(d) From the perspective of an investor, there is a risk that the special purpose entity is being used primarily to make Steinem's statement of financial position and liquidity position appear better. As a general rule, special purpose entities should be consolidated with the main company when the main company is the primary beneficiary.

BRIEF EXERCISE 14-23

Current liabilities

Bond interest payable.....	**$ 25,000**
Bonds payable, due September 1, 2018	**$1,200,000**

BRIEF EXERCISE 14-24

(a)

Ambrosia Limited
Partial Statement of Financial Position
As at December 31, 2017

Liabilities

Accounts payable and accrued liabilities	$ 20,000
Wages payable	15,000
Severance payable	15,000
Bonds payable	140,000
Total liabilities	$190,000

(b)

Ambrosia Limited
Partial Statement of Financial Position
As at December 31, 2017

Liabilities

Current	
Accounts payable and accrued liabilities	$ 20,000
Wages payable	15,000
Current portion of bonds payable	30,000
Total current liabilities	65,000
Long-term	
Severance payable	15,000
Bonds payable	110,000
Total long-term liabilities	125,000
Total liabilities	$190,000

BRIEF EXERCISE 14-25

Debt-paying ability may be evaluated by calculating the debt to total assets ratio:

2017 - $500,000 / $900,000= 56%
2016 - $750,000/$ 700,000 = 107%

Sports International's debt to assets ratio improved from 2016 to 2017, so their debt-paying ability and long-term solvency has improved.

Debt-paying ability may also be evaluated by calculating the current ratio:

2017 - $120,000 / $100,000 = 1.2
2016 - $140,000 / $150,000 = 0.93

Based on Sports International's current ratio, their ability to meet short term payment requirements in 2017 improved from 2016.

SOLUTIONS TO EXERCISES

EXERCISE 14-1 (10-15 minutes)

(a)

1. **ii**
2. **iii**
3. **ii**
4. **ii**
5. **i**
6. **ii**
7. **ii**
8. **i**

(b) A feature or characteristic that increases the riskiness of the long-term debt will cause investors to require a higher yield on the long-term debt. A higher yield on the long-term debt will give investors an acceptable return that matches the issuer's risk characteristics.

EXERCISE 14-2 (35-45 minutes)

		Unsecured Bonds	Zero Coupon Bonds	Mortgage Bonds
(a)	Maturity value	$10,000,000	$2,500,000	$15,000,000
(b)	Number of interest periods	40	10	10
(c)	Stated rate per period	3.25% (13% / 4)	0	10%
(d)	Effective rate per period	3% (12% / 4)	12%	12%
(e)	Payment amount per period	$325,000 [1]	0	$1,500,000 [2]
(f)	Present value	$10,577,900 [3]	$804,925 [4]	$13,304,880 [5]

[1] $10,000,000 X 13% X 1/4 = $325,000
[2] $15,000,000 X 10% = $1,500,000

1) Using tables

[3] Present value of an annuity of $325,000 discounted at 3% per period for 40 periods ($325,000 X 23.11477) = $ 7,512,300

Present value of $10,000,000 discounted at 3% per period for 40 periods ($10,000,000 X .30656) = 3,065,600

$10,577,900

2) Using a financial calculator:

PV	$?	Yields $10,577,869
I	3%	
N	40	
PMT	$ (325,000)	
FV	$ (10,000,000)	
Type	0	

EXERCISE 14-2 (CONTINUED)

3) Using Excel: = PV(rate,nper,pmt,fv,type)

1) Using tables

(4) Present value of $2,500,000 discounted at 12% for 10 periods
($2,500,000 X .32197) = $804,925

2) Using a financial calculator:

PV	$?	Yields $804,933
I	12%	
N	10	
PMT	0	
FV	$ (2,500,000)	
Type	0	

3) Using Excel: = PV(rate,nper,pmt,fv,type)

1) Using tables

(5) Present value of an annuity of $1,500,000 discounted at 12% for 10 periods
($1,500,000 X 5.65022) = $8,475,330
Present value of $15,000,000 discounted at 12% for 10 years
($15,000,000 X .32197) 4,829,550

2) Using a financial calculator:

PV	$?	Yields $13,304,933
I	12%	
N	10	
PMT	$ (1,500,000)	
FV	$ (15,000,000)	
Type	0	

EXERCISE 14-2 (CONTINUED)

<u>3) Using Excel:</u> = PV(rate,nper,pmt,fv,type)

A more accurate result is obtained compared to using factors from tables as there are a limited number of decimal places in the tables.

(g) Similarities and differences among the bond features and their impact on risk are as follows:

– bond maturity (duration) – The bonds all have the same maturity date (duration), thus this risk factor is equalized among the bonds.

– bond stated rate and effective interest rate – The bonds all have a different stated interest rate (ranging from a deep discount, zero coupon bond of 0% to 13%). A discount on bonds payable results when investors demand a rate of interest higher than the rate stated on the bonds. This occurs when the investors are not satisfied with the stated nominal interest rate because they can earn a greater rate on alternative investments of equal risk. They refuse to pay par for the bonds and cannot change the stated nominal rate. However, by lowering the amount paid for the bonds, investors can alter the effective rate of interest. A premium on bonds payable results from the opposite conditions. That is, when investors are satisfied with a rate of interest lower than the rate stated on the bonds, they are willing to pay more than the face value of the bonds in order to acquire them, thus reducing their effective rate of interest below the stated rate. In this case, all the bonds are set to yield an effective interest rate of 12%, which adjusts the pricing of each individual bond so that they are all equally attractive to investors (purely on interest rates).

– timing of cash flows – The bonds all have differing timing of cash flow to the investors. This can affect their risk, as cash flows further in the future have a higher risk factor than cash flows in the present.

EXERCISE 14-2 (CONTINUED)

(g) (continued)

– bond security – Bonds security affects the risk of the bond. In the event of default, a secured bond will rank higher than an unsecured bond. Thus, unsecured bonds are generally riskier than secured bonds. Presumably the mortgage bonds have security.

All of the above factors have to be assessed together to determine the riskiness of each bond. The zero-coupon bonds have no cash flows over the entire 10-year term, making them riskier in that the company may not be able to pay
back the $2.5 million at that time. On the other hand, the zero-coupon bonds may have more security underlying them than the 13% bonds which are listed as unsecured. The mortgage bonds are the least risky with the interest cash flows spread over the life of the bonds, and with physical property pledged as collateral in the case of inability of Anaconda to pay the principal or interest. Further information is required, however, about the fair value of the underlying collateral.

EXERCISE 14-3 (15-20 minutes)

1. Divac Limited:

(a)	**1/1/17**	**Cash**	**300,000**	
		Bonds Payable		**300,000**
(b)	**7/1/17**	**Interest Expense**	**6,750**	
		($300,000 X 9% X 3/12)		
		Cash		**6,750**
(c)	**12/31/17**	**Interest Expense**	**6,750**	
		Interest Payable		**6,750**

2. Verbitsky Inc.:

(a)	**6/1/17**	**Cash**	**210,000**	
		Bonds Payable		**200,000**
		Interest Expense		**10,000**
		($200,000 X 12% X 5/12)		
(b)	**7/1/17**	**Interest Expense**	**12,000**	
		Cash		**12,000**
		($200,000 X 12% X 6/12)		
(c)	**12/31/17**	**Interest Expense**	**12,000**	
		Interest Payable		**12,000**

<u>Note to instructor:</u> Some students may credit Interest Payable on 6/1/17. If they do so, the entry on 7/1/17 will have a debit to Interest Payable for $10,000 and a debit to Interest Expense for $2,000.

EXERCISE 14-4 (15-20 minutes)

(a)

1/1/17	Cash ($800,000 X 102%)	816,000	
	Bonds Payable		816,000

(b)

7/1/17	Interest Expense	39,780	
	($816,000 X 9.75% X 1/2)		
	Bonds Payable	220	
	Cash		40,000
	($800,000 X 10% X 6/12)		

(c)

12/31/17	Interest Expense	39,769	
	($815,780* X 9.75% X 1/2)		
	Bonds Payable	231	
	Interest Payable		40,000

*Carrying amount of bonds at July 1, 2017:

Carrying amount of bonds at January 1, 2017	$816,000
Amortization of bond premium ($40,000 – $39,780)	(220)
Carrying amount of bonds at July 1, 2017	$815,780

EXERCISE 14-5 (15-20 minutes)

(a)

(1)	**1/1/17**	**Cash ($800,000 X 102%).....**	**816,000**	
		Bonds Payable		**816,000**
(2)	**7/1/17**	**Interest Expense.....**	**39,600**	
		Bonds Payable.....	**400**	
		($16,000 ÷ 40)		
		Cash.....		**40,000**
		($800,000 X 10% X 6/12)		
(3)	**12/31/17**	**Interest Expense.....**	**39,600**	
		Bonds Payable.....	**400**	
		Interest Payable		**40,000**

(b) Although the effective interest method is required under IFRS per IFRS 9.5.4.1, accounting standards for private enterprises do not specify that this method must be used and therefore, the straight-line method is also an option. The straight-line method is valued for its simplicity and might be used by companies whose financial statements are not constrained by this specific element of GAAP.

EXERCISE 14-6 (15-20 minutes)

(a)	**January 1, 2017**		
1.	**Land and Buildings.....**	**1,500,000**	
	Notes Payable.....		**1,500,000**
	(The $1,500,000 capitalized cost represents the present value of the note with maturity amount of $2,307,941 discounted for five years at 9%)		
2.	**Land.....**	**1,743,292**	
	Mortgage Payable.....		**1,743,292**

1) Using tables:

Present value of $2,000,000 due in 10 years at 9%—$2,000,000 X .42241	**$844,820**	
Present value of $140,000 ($2,000,000 X 7%) payable annually for 10 years at 9% annually—$140,000 X 6.41766	**898,472**	
Present value of the note	**$1,743,292**	
Discount to be amortized		**$ 256,708**

EXERCISE 14-6 (CONTINUED)

(a) (continued)

3) Using Excel: = PV(rate,nper,pmt,fv,type)

A more accurate result is obtained compared to using factors from tables as there are a limited number of decimal places in the tables. This difference is in most cases immaterial.

(b)

1.	**Interest Expense.....**	**135,000**	
	Notes Payable.....		**135,000**
	($1,500,000 X .09)		
2.	**Interest Expense.....**	**156,896**	
	($1,743,292 X .09)		
	Mortgage Payable.....		**16,896**
	Cash ($2,000,000 X .07).....		**140,000**

EXERCISE 14-7 (15-20 minutes)

(a) 1) Using tables

Face value of the non-interest-bearing note	$600,000
Discounting factor (12% for 3 periods)	X .71178
Amount to be recorded for the land at January 1, 2017	$427,068

2) Using a financial calculator:

PV	$?	Yields $427,068.15
I	12%	
N	3	
PMT	0	
FV	$ (600,000)	
Type	0	

3) Using Excel: = PV(rate,nper,pmt,fv,type)

Carrying amount of the note at January 1, 2017	$427,068
Applicable interest rate (12%)	X .12
Interest expense to be reported in 2017	$ 51,248

The assessed value for the land is not as clear a measure of the value of the land compared to the present value of the future cash flows on the note. The present value represents the agreed cash flows, discounted at the market rate of interest, whereas the assessed value has been computed (generally) only for the purpose of municipal taxation. It can be used as a reasonableness check on the amount arrived for the carrying amount of the non-interest-bearing note.

EXERCISE 14-7 (CONTINUED)

(b) 1) Using tables

$4,000,000 X .68301 = $2,732,040

2) Using a financial calculator:

PV	**$?**	**Yields $2,732,054**
I	**10%**	
N	**4**	
PMT	**0**	
FV	**$ (4,000,000)**	
Type	**0**	

3) Using Excel: = PV(rate,nper,pmt,fv,type) – same as financial calculator

A more accurate result is obtained using excel and a financial calculator compared to using factors from tables as there are a limited number of decimal places in the tables. This difference is in most cases immaterial.

EXERCISE 14-8 (15-20 minutes)

(a) The purchase price of the land should be recorded at the present value of the future cash flows of the instalment note at the imputed interest rate of 9%. This is the fairest measure of the value of the asset obtained as it represents the present value of an agreed series of future cash flows. The listing price represents a tentative amount "asked" for the property and could be above or below the eventual agreed value.

(b) Land will be recorded at $110,000 based on the calculations below:

1) Using tables

***PV of $43,456 ordinary annuity @ 9% for 3 years: ($43,456 X 2.53130) = $110,000**

2) Using a financial calculator:

PV	**?**	**Yields $ 110,000**
I	**9%**	
N	**3**	
PMT	**$ (43,456)**	
FV	**$ 0**	
Type	**0**	

3) Using Excel: = PV(rate,nper,pmt,fv,type)

(c)

Effective Interest Amortization Table
Effective Interest Method – 9%

Year	Note Payment	9% Interest	Reduction of Principal	Carrying Amount
1/1/17				$110,000
12/31/17	$43,456	$9,900	$ 33,556	76,444
12/31/18	43,456	6,880	36,576	39,868
12/31/19	43,456	3,588	39,868	0

EXERCISE 14-8 (CONTINUED)

(d)	**Land**	**110,000**	
	Notes Payable		**110,000**
(e)	**Interest Expense**	**9,900**	
	Notes Payable	**33,556**	
	Cash		**43,456**

(f) From the perspective of Safayeni Ltd., an instalment note provides for a reduced risk of collection when compared to a regular interest-bearing note. In the case of the interest-bearing note, the principal amount is due at the maturity of the note. Further, the instalment note provides a regular reduction of the principal balance in every payment received annually and therefore reduces Safayeni's investment in the receivable, freeing up the cash for other purposes. This is demonstrated in the effective interest amortization table provided above for the instalment note.

EXERCISE 14-9 (15-20 minutes)

(a)	**Equipment**	**316,987***	
	Notes Payable		**316,987**

1) Using tables

***PV of $100,000 annuity @ 10% for 4 years: ($100,000 X 3.16987) = $316,987**

2) Using a financial calculator:

PV	**$?**	**Yields $316,987**
I	**10%**	
N	**4**	
PMT	**$ (100,000)**	
FV	**$ 0**	
Type	**0**	

3) Using Excel: = PV(rate,nper,pmt,fv,type)

(b)	**Interest Expense**	**31,699***	
	Notes Payable	**68,301**	
	Cash		**100,000**

***(10% X $316,987)**

Year	Note Payment	10% Interest	Reduction of Principal	Carrying Amount
1/2/17				$316,987
12/31/17	$100,000	$ 31,699	$ 68,301	248,686
12/31/18	100,000	24,869	75,131	173,555

(c)	**Interest Expense**	**24,869**	
	Notes Payable	**75,131**	
	Cash		**100,000**

EXERCISE 14-10 (15-20 minutes)

(a)	**Equipment .....**	**86,349.00***	
	Cash.....		**30,000.00**
	Notes Payable		**56,349.00**

1) Using tables

***PV of $75,000 @ 10% for 3 years**	
($75,000 X 0.75132)	**$56,349**
Down payment	**30,000**
Capitalized value of equipment	**$86,349**

2) Using a financial calculator:

PV	**$?**	**Yields $56,349**
I	**10%**	
N	**3**	
PMT	**$ 0**	
FV	**($ 75,000)**	
Type	**0**	

3) Using Excel: = PV(rate,nper,pmt,fv,type)

(b)	**December 31, 2018:**		
	Interest Expense (see schedule).....	**5,634.90**	
	Notes Payable		**5,634.90**

Year	10% Interest	Balance
12/31/17		$56,349.00
12/31/18	$5,634.90	61,983.90
12/31/19	6,198.39	68,182.29
12/31/20	6,817.71*	75,000.00

*** rounded by $0.52**

EXERCISE 14-10 (CONTINUED)

(b) (continued)

December 31, 2019:		
Interest Expense	**6,198.39**	
Notes Payable		**6,198.39**
December 31, 2020:		
Interest Expense	**6,817.71**	
Notes Payable	**75,000.00**	
Notes Payable		**6,817.71**
Cash.....		**75,000.00**

(c) Accounting standards for private enterprises do not specify that the effective interest method must be used and therefore, the straight-line method is also an option. Collins may prefer to use the straight-line method due to its simplicity. However, the effective interest method is required under IFRS per IFRS 9.5.4.1.

EXERCISE 14-11 (15-20 minutes)

(a)

	January 1, 2017	
Cash	**860,652**	
Bonds Payable		**860,652**

(b)

Schedule of Interest Expense and Bond Premium Amortization
Effective Interest Method
12% Bonds Sold to Yield 10%

Date	Credit Cash	Debit Interest Expense	Debit Bond Payable	Carrying Amount of Bonds
1/1/17	–	–	–	$860,652
1/1/18	$96,000.00	$86,065	$9,935	850,717
1/1/19	96,000.00	85,072	10,928	839,789
1/1/20	96,000.00	83,979	12,021	827,768

(c)

	December 31, 2017	
Interest Expense	**86,065**	
Bonds Payable	**9,935**	
Interest Payable		**96,000**
	January 1, 2018	
Interest Payable	**96,000**	
Cash		**96,000**

(d)

	December 31, 2019	
Interest Expense	**83,979**	
Bonds Payable	**12,021**	
Interest Payable		**96,000**
	January 1, 2020	
Interest Payable	**96,000**	
Cash		**96,000**

EXERCISE 14-11 (CONTINUED)

(e) Accounting standards for private enterprises do not specify that the effective interest method must be used and therefore, the straight-line method is also an option. Osborn may prefer to use the straight-line method due to its simplicity. However, the effective interest method is required under IFRS per IFRS 9.5.4.1.

EXERCISE 14-12 (15-20 minutes)

Schedule of Discount Amortization
Straight-Line Method

Year	Credit Interest Payable	Debit Interest Expense	Credit Bond Payable		Carrying Amount of Bonds
Jan. 1, 2017					$800,000
July 1, 2017	$40,000	$90,000	$50,000	*	850,000
Dec. 31, 2017	40,000	90,000	50,000		900,000
July 1, 2018	40,000	90,000	50,000		950,000
Dec. 31, 2018	40,000	90,000	50,000		1,000,000

*$50,000 = ($1,000,000 – 800,000) / 4 semi-annual periods

EXERCISE 14-13 (15-20 minutes)

(a) Using a financial alculator:

PV	$ 2,783,713	
I	? %	Yield 12%
N	5	
PMT	$ (300,000)	
FV	$ (3,000,000)	
Type	0	

Excel formula: = RATE(nper,pmt,pv,fv,type)

Schedule of Discount Amortization
Effective Interest Method (12%)

Year	Credit Interest Payable	Debit Interest Expense	Credit Bond Payable	Carrying Amount of Bonds
	(1)	(2)	(3)	(4)
Jan. 1, 2017				$2,783,713
Dec. 31, 2017	$300,000	$334,046 *	$34,046	2,817,759
Dec. 31, 2018	300,000	338,131	38,131	2,855,890
Dec. 31, 2019	300,000	342,707	42,707	2,898,597
Dec. 31, 2020	300,000	347,832	47,832	2,946,429
Dec. 31, 2021	300,000	353,571 **	53,571	3,000,000.00

***$334,046 = $2,783,713 X .12.**
****Rounded.**

EXERCISE 14-13 (CONTINUED)

(b) The straight-line method results in higher interest expense for the year ended December 31, 2017, and the effective interest method results in higher interest expense for the year ended December 31, 2021. Under the straight-line method, the amount that is amortized each year is constant. Under the effective interest method, the amount amortized each year is based on a constant percentage of the bonds' increasing carrying amount. A user who would like the company's income statement to reflect the most faithfully representative measure of net income would prefer that the company use the effective interest method, under which interest expense correlates more closely with the actual carrying amount of the bond.

EXERCISE 14-14 (15-20 minutes)

1.

Printing and engraving costs of bonds	$25,000
Legal fees	69,000
Commissions paid to underwriter	70,000
Amount to be reported	$164,000

When a note or bond is issued, it should be recognized at the fair value adjusted by any directly attributable issue costs. The costs would affect the amount of bond premium or discount amortization recorded and effectively increase the interest expense over the term of the bond. However, note that where the liabilities will subsequently be measured at fair value (e.g., under the fair value option or because they are derivatives), the transaction costs should not be included in the initial measurement (i.e., the costs should be expensed at the time of issuance) [*CPA Canada Handbook*, Part II, Section 3856.07 and IFRS 9.5.1.1].

2.

Interest paid for each period, from January 1 to June 30, 2017 and July 1 to Dec. 31, 2017 $3,000,000 X 10% X 6/12	$150,000
Less: Premium amortization for each period from January 1 to June 30, and July 1 to Dec. 31, [($3,000,000 X 1.04) – $3,000,000] ÷ 10 X 6/12	6,000
Interest expense to be recorded on each of July 1 and December 31, 2017	$ 144,000

3.

Carrying amount of bonds on June 30, 2017	$562,613
Effective interest rate for the period from June 30 to October 31, 2017 (.10 X 4/12)	X .033333
Interest expense to be recorded on October 31, 2017	$ 18,754

EXERCISE 14-14 (CONTINUED)

4.

Carrying amount of bonds on Dec. 31, 2017	**$850,716.97**
Less: fair value of bonds on Dec. 31, 2017	**838,000.00**
Gain on bonds due to change in credit risk	**$12,716.97**

Under IAS 39, where the fair value option is selected, credit risk is incorporated into the measurement and resulting gains/losses are booked through net income. However, under IFRS 9 gains/losses related to changes in credit risk are booked through Other Comprehensive Income.

(Note that under ASPE, where the fair value option is used, credit risk is incorporated into the measurement and resulting gains/losses are booked through net income.)

EXERCISE 14-15 (15-20 minutes)

(a) **Through the interest-free forgivable loan for Sunshine to build additional solar panels, the government is reducing the cost of the panels in addition to providing the financing. The company is avoiding the interest it would ordinarily have been charged. Sunshine is getting a double benefit. First it is getting the loan and second the company does not have to incur interest payments on the note. Since the company believes that the loan will be forgiven, the benefit has to be accounted for as a government grant. The measurement of the interest at 12% is the fair rate of interest to impute on this loan.**

(b) **1) Using tables:**

***PV of $500,000 @ 12% discounted 5 years**
(500,000 x 0.56743 = 283,715)

2) Using a financial calculator:

PV	**$?**	**Yields $ 283,713**
I	**12%**	
N	**5**	
PMT	**$ 0**	
FV	**$ (500,000)**	
Type	**0**	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

Schedule of Note Discount Amortization

Date	Debit, Interest Expense Credit Notes Payable	Carrying Amount of Note
12/31/17		$ 283,715
12/31/18	$34,046	317,761
12/31/19	38,131	355,892
12/31/20	42,707	398,599

EXERCISE 14-15 (CONTINUED)

(c)

Cash	**500,000**	
Notes Payable		**283,715**
Equipment		**216,285**

($500,000 – $283,715 = $216,285)

(d)

December 31, 2018

Interest Expense	**34,046**	
Notes Payable		**34,046**

EXERCISE 14-16 (20-30 minutes)

(a)

1.

	June 30, 2017		
Cash		4,300,920	
Bonds Payable			4,300,920

2.

	December 31, 2017		
Interest Expense		258,055	
($4,300,920 X 12% X 6/12)			
Bonds Payable		1,945	
Cash			260,000
($4,000,000 X 13% X 6/12)			

3.

	June 30, 2018		
Interest Expense		257,939	
[($4,300,920 – $1,945)			
X 12% X 6/12]			
Bonds Payable		2,061	
Cash			260,000

4.

	December 31, 2018		
Interest Expense		257,815	
[($4,300,920 – $1,945 –			
$2,061) X 12% X 6/12]			
Bonds Payable		2,185	
Cash			260,000

(b) Long-term Liabilities:

Bonds payable, 13% (due on June 30, 2037) $4,298,975

($4,300,920 – $1,945) = $4,298,975

EXERCISE 14-16 (CONTINUED)

(c)

1. **Interest expense for the period from July 1 to December 31, 2017 from (a) 2. $258,055**

Amount of bond interest expense reported for 2017 $258,055

2. **The amount of bond interest expense reported in 2017 will be greater than the amount that would be reported if the straight-line method of amortization were used. Under the straight-line method, the amortization of bond premium is $7,523 ($300,920/20 X 6/12). Bond interest expense for 2017 would be the difference between the actual interest paid, $260,000 ($4,000,000 X 13% X 6/12) and the amortized premium, $7,523. Thus, the amount of bond interest expense would be $252,477, which is smaller than the bond interest expense under the effective interest method.**

Note: Although the effective interest method is required under IFRS per IFRS 9.5.4.1, accounting standards for private enterprises do not specify that this method must be used and therefore, the straight-line method is also an option. The straight-line method is valued for its simplicity and might be used by companies whose financial statements are not constrained by this specific element of GAAP.

3.

Total interest to be paid for the bond ($4,000,000 X 13% X 20)	**$10,400,000**
Principal due in 2037	**4,000,000**
Total cash outlays for the bond	**14,400,000**
Cash received at issuance of the bond	**(4,300,920)**
Total cost of borrowing over the life of the bond	**$10,099,080**

4. **They will be the same, although the pattern of recognition will be different.**

EXERCISE 14-17 (10-15 minutes)

Reacquisition price ($500,000 X 104%).....		**$520,000**
Less: Net carrying amount of bonds redeemed:		
Face value	**$500,000**	
Unamortized discount	**(10,000)**	**490,000**
Loss on redemption.....		**$ 30,000**

Bonds Payable	**490,000**	
Loss on Redemption of Bonds	**30,000**	
Cash.....		**520,000**
(To record redemption of bonds payable)		

Cash.....	**512,000**	
Bonds Payable ($500,000 + $15,000 – $3,000).....		**512,000**
(To record issuance of new bonds)		

Note: When a note or bond is issued, it should be recognized at the fair value adjusted by any directly attributable issue costs. These costs would affect the amount of bond premium or discount amortization recorded and effectively increase the interest expense over the term of the bond through the allocation of the issuance cost to periods. However, note that where the liabilities will subsequently be measured at fair value (e.g., under the fair value option or because they are derivatives), the transaction costs should not be included in the initial measurement (i.e., the costs should be expensed at the time of issuance) [*CPA Canada Handbook*, Part II, Section 3856.07 and IFRS 9.5.1.1].

EXERCISE 14-18 (15-20 minutes)

(a)

	June 30, 2017	
Bonds Payable	789,600	
Loss on Redemption of Bonds	42,400	
Cash		832,000

Reacquisition price ($800,000 X 104%)		$832,000
Carrying amount of bonds redeemed:		
Par value	$800,000	
Unamortized discount (.02 X $800,000 X 13/20)	(10,400)	(789,600)
Loss on redemption		$ 42,400

Cash ($1,000,000 X 102%)	1,020,000	
Bonds Payable		1,020,000

(b)

	December 31, 2017	
Interest Expense	49,500	
Bonds Payable	500*	
Cash		50,000**

*(1/40 X $20,000 = $500)

**(.05 X $1,000,000 = $50,000)

EXERCISE 14-19 (30-35 minutes)

1) **Using a financial calculator:**

PV	$ 784,000	
I	? %	Yields 6.135%
N	40	
PMT	$ (48,000)	
FV	$ (800,000)	
Type	0	

2) **Using Excel:** =RATE(nper,pmt,pv,fv,type)

Schedule of Bond Discount Amortization
Effective Interest Method
12% Semi-annual Bonds Sold to Yield 12.27%

Date		6.0% Cash Paid	6.135% Interest Expense	Discount Amortized	Carrying Amount
June 30	2010				$784,000.00
Dec. 31	2010	$48,000.00	$48,098.44	$98.40	784,098.40
June 30	2011	48,000.00	48,104.44	104.44	784,202.84
Dec. 31	2011	48,000.00	48,110.84	110.84	784,313.68
June 30	2012	48,000.00	48,117.64	117.64	784,431.33
Dec. 31	2012	48,000.00	48,124.86	124.86	784,556.19
June 30	2013	48,000.00	48,132.52	132.52	784,688.71
Dec. 31	2013	48,000.00	48,140.65	140.65	784,829.36
June 30	2014	48,000.00	48,149.28	149.28	784,978.64
Dec. 31	2014	48,000.00	48,158.44	158.44	785,137.08
June 30	2015	48,000.00	48,168.16	168.16	785,305.24
Dec. 31	2015	48,000.00	48,178.48	178.48	785,483.72
June 30	2016	48,000.00	48,189.43	189.43	785,673.15
Dec. 31	2016	48,000.00	48,201.05	201.05	785,874.19
June 30	2017	48,000.00	48,213.38	213.38	786,087.57
				$2,087.57	

EXERCISE 14-19 (CONTINUED)

Although not required, the entry at the issuance of the bonds:

6/30/10	**Cash ($800,000 X 98%)**	**784,000**	
	Bonds Payable		**784,000**

(a)

At June 30, 2017 the carrying amount of the bonds is as indicated in the effective interest table: $786,087.57

	June 30, 2017	
Bonds Payable	**786,087.57**	
Loss on Redemption of Bonds	**45,912.43**	
Cash		**832,000.00**

Reacquisition price ($800,000 X 104%)	**$832,000.00**
Net carrying amount of bonds redeemed:	**786,087.57**
Loss on redemption	**$45,912.43**

Cash ($1,000,000 X 102%)	**1,020,000**	
Bonds Payable		**1,020,000**

EXERCISE 14-19 (CONTINUED)

(a) (continued)

1) Using a financial calculator:

PV	$ 1,020,000	
I	? %	Yields 4.885 %
N	40	
PMT	$ (50,000)	
FV	$ (1,000,000)	
Type	0	

2) Using Excel: **=RATE(nper,pmt,pv,fv,type)**

(b)

	December 31, 2017	
Interest Expense	49,827.00	
Bonds Payable	173.00	
Cash.....		50,000.00

($1,020,000 X 4.885% = $49,827.00)

EXERCISE 14-20 (20-25 minutes)

(a)

Reacquisition price ($850,000 X 102%)	**$867,000**
Less: Net carrying amount of bonds redeemed:	
Par value	**850,000**
Unamortized discount	**(43,917)**
	806,083
Loss on redemption	**$ 60,917**

Calculation of unamortized discount—	
Original amount of discount:	
$850,000 X 3% = $25,500	**$25,500**
Bond issuance costs ($110,000 X $850,000/$1,500,000 =	**62,333**
Amount to be amortized over 10 years	**$87,833**

Amount of discount unamortized:
($87,833 X 5) ÷ 10 = $43,917

January 2, 2017

Bonds Payable	**806,083**	
Loss on Redemption of Bonds	**60,917**	
Cash		**867,000**

EXERCISE 14-20 (CONTINUED)

(b) Had the costs of issuing the bond of $110,000 been expensed on the date of issue (which is the required accounting treatment for transactions costs when the debt is subsequently measured at fair value rather than amortized cost), the issue costs would have been charged to expense in 2012.

Reacquisition price ($850,000 X 102%)	**$867,000**
Less: Carrying amount of bonds on the reacquisition date = fair value at that date (see assumption)	**867,000**
Gain/Loss on redemption	**$ -0-**

Note to instructor: Since the bonds are carried at fair value, there would be no separate gain or loss on retirement. All changes in the fair value of the bonds would have already been recognized in net income in prior years. If the company had adopted IFRS 9 early in prior years, all changes in the fair value of the bonds (which relate to changes in credit risk) would have already been recognized in Other Comprehensive Income.

January 2, 2017

Bonds Payable	**867,000**	
Cash		**867,000**

EXERCISE 14-20 (CONTINUED)

(c) If Kowalchuk were to follow IFRS, then the effective interest method must be used to amortize any discounts or premiums. Although the effective interest method is required under IFRS per IFRS 9.5.4.1, accounting standards for private enterprises do not specify that this method must be used and therefore, the straight-line method is also an option. The straight-line method is valued for its simplicity and might be used by companies whose financial statements are not constrained by this specific element of GAAP.

Under IAS 39, where the fair value option is selected, credit risk is incorporated into the measurement and resulting gains/losses are booked through net income. However, under IFRS 9, gains/losses related to changes in credit risk are booked through Other Comprehensive Income.

(Note that under ASPE, where the fair value option is used, credit risk is incorporated into the measurement and resulting gains/losses are booked through net income.)

EXERCISE 14-21 (15-20 minutes)

Cash ($5,000,000 X .97)	4,850,000	
Bonds Payable		4,850,000
(To record issuance of 6% bonds)		
Bonds Payable	8,900,000	
Loss on Redemption of Bonds	1,600,000	
Cash ($10,000,000 X 1.05)		10,500,000
(To record retirement of 8% bonds)		
Reacquisition price		$10,500,000
Less: Net carrying amount of bonds redeemed:		
Par value	$10,000,000	
Unamortized bond discount	(1,100,000)	8,900,000
Loss on redemption		$ 1,600,000

EXERCISE 14-22 (15-25 minutes)

(a) Journal entry to record issuance of loan by Par Bank:

December 31, 2016		
Notes Receivable	**81,241**	
Cash		**81,241**

(b)

Note Amortization Schedule
(Before Impairment)

Date	Cash Received (0%)	Interest Income (9%)	Discount Amortized	Carrying Amount of Note
12/31/16				$81,241
12/31/17	$0	$7,312	$7,312	88,553

Computation of the impairment loss:

Carrying amount of investment (12/31/17)	**$88,553**

1) Using tables:

Less: Present value of $93,750 due in 4 years at 9% ($93,750 X .70843)	**66,415**
Loss due to impairment	**$22,138**

2) Using a financial calculator:

PV	**$?**	**Yields $66,415**
I	**9%**	
N	**4**	
PMT	**0**	
FV	**$ (93,750)**	
Type	**0**	

EXERCISE 14-22 (CONTINUED)

(b) (continued)

3) Using Excel: = PV(rate,nper,pmt,fv,type)

The entry to record the loss by Par Bank is as follows:

Bad Debt Expense.....	**22,138**	
Allowance for Doubtful Accounts.....		**22,138**

(c) Mohr Inc., the debtor, makes no entry because it still legally owes $125,000.

EXERCISE 14-23 (15-20 minutes)

(a) Transfer of property on December 31, 2017:

Strickland Inc. (Debtor):

Notes Payable	200,000	
Interest Payable	18,000	
Accumulated Depreciation—Machinery	221,000	
Machinery		390,000
Gain on Disposal of Machinery		11,000[a]
Gain on Restructuring of Debt		38,000[b]

[a]$180,000 – ($390,000 – $221,000) = $11,000.
[b]($200,000 + $18,000) – $180,000 = $38,000.

Heartland Bank (Creditor):

Machinery	180,000	
Allowance for Doubtful Accounts*	38,000	
Notes Receivable		200,000
Interest Receivable		18,000

*Assumes Heartland had previously recognized a loss when they determined the loan was impaired, and set up an allowance for doubtful accounts or had otherwise included this category of notes in allowance calculations.

(b) If "Gain on Sale of Machinery" and "Gain on Restructuring of Debt" do not occur frequently, they are still presented as part of income from continuing operations. If they are not material in amount, they are combined with the other items in the income statement. If they are material, they are disclosed separately. However, if the same types of gains/losses recur each year, then they are not really unusual and care must be taken to classify them with other gains and losses as normal transactions.

EXERCISE 14-23 (CONTINUED)

(c) Granting of equity interest on December 31, 2017:

Strickland Inc. (Debtor):		
Notes Payable	**200,000**	
Interest Payable	**18,000**	
Common Shares		**190,000**
Gain on Restructuring of Debt		**28,000**
Heartland Bank (Creditor):		
FV-NI Investments	**190,000**	
Allowance for Doubtful Accounts*	**28,000**	
Notes Receivable		**200,000**
Interest Receivable		**18,000**

***Assumes Heartland had previously recognized a loss when they determined the loan was impaired, and set up an allowance for doubtful accounts or had otherwise included this category of notes in allowance calculations.**

EXERCISE 14-24 (20-30 minutes)

(a) The first step is to determine the economic substance of the debt renegotiation and determine if it should be accounted as a settlement or a modification/exchange regarding the old debt. In this case, the creditor is the same and so is the currency and therefore the test to establish whether there is a settlement or not revolves around the cash flows. The present value of the cash flow streams of the new debt are calculated using the historical interest rate of 12% for consistency and comparability.

Present value of old debt is $2,000,000.
Present value of new debt is calculated as follows:

1) Using tables:

		12% Factor	Present Value
Single amount	$ 1,900,000	0.71178	$ 1,352,382
Interest annuity	190,000	2.40183	456,348
			$ 1,808,730

2) Using a financial calculator:

PV	$?	Yields $1,808,730
I	12%	
N	3	
PMT	$ (190,000)	
FV	$ (1,900,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

EXERCISE 14-24 (CONTINUED)

(a) (continued)

Since the present value of the future cash flows of the new debt does not differ by an amount greater than 10% of the present value of the old debt, the renegotiated debt is not considered a settlement. No gain is recorded by Troubled. This is considered a modification of terms. The old debt remains on the books of Troubled at $2,000,000 and no gain or loss is recognized. Note disclosure is required.

(b) The new effective rate of 7.9592% was computed by Troubled in order to record the interest expense based on the future cash flows specified by the new terms with the pre-restructuring carrying amount of the debt of $2,000,000. The rate would have been calculated as follows:

1) Using a financial calculator:

PV	$ 2,000,000	
I	? %	Yields 7.9592 %
N	3	
PMT	$ (190,000)	
FV	$ (1,900,000)	
Type	0	

2) Using Excel: =RATE(nper,pmt,pv,fv,type)

EXERCISE 14-24 (CONTINUED)

The interest payment schedule is prepared as follows:

TROUBLED INC.
INTEREST PAYMENT SCHEDULE AFTER DEBT RESTRUCTURING
EFFECTIVE INTEREST RATE 7.9592%

Date	Cash Interest (10%)	Effective Interest (7.9592%)	Reduction of Carrying Amount	Carrying Amount of Note
12/31/17				$2,000,000
12/31/18	$190,000[a]	$159,184[b]	$30,816[c]	1,969,184
12/31/19	190,000	156,731	33,269	1,935,915
12/31/20	190,000	154,085[d]	35,915	1,900,000
Total	$570,000	$470,000	$100,000	

[a]$1,900,000 X 10% = $190,000.
[b]$2,000,000 X 7.9592% = $159,184.
[c]$190,000 – $159,184 = $30,816.
[d]Adjusted for rounding.

(c) Interest payment entry for Troubled Inc. is:

	December 31, 2019	
Notes Payable	33,269	
Interest Expense	156,731	
Cash		190,000

(d) The payment entry at maturity is:

	January 1, 2021	
Notes Payable	1,900,000	
Cash		1,900,000

EXERCISE 14-25 (25-30 minutes)

(a) The Green Bank should use the historical interest rate of 12% to calculate the loss.

(b)

Pre-restructuring carrying amount of note	$2,000,000
Present value of restructured cash flows (below)	1,808,730
Loss on restructuring of debt	$ 191,270

1) Using tables:

		12% Factor	Present Value
Single amount	$ 1,900,000	0.71178	$ 1,352,382
Interest annuity	190,000	2.40183	456,348
			$ 1,808,730

2) Using a financial calculator:

PV	$?	Yields $1,808,730
I	12%	
N	3	
PMT	$ (190,000)	
FV	$ (1,900,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

	December 31, 2017	
Modification Gain or Loss	191,270	
Notes Receivable		191,270

Note: Any gains or losses on modification of contractual cash flows must be shown in the income statement as a modification gain or loss (IFRS 9.5.4.3). If Green Bank had previously recognized an Allowance for Doubtful Accounts related to this account, the debit account would have been the Allowance account instead of the expense account.

EXERCISE 14-25 (CONTINUED)

(c) The interest receipt schedule is prepared as follows:

GREEN BANK
INTEREST RECEIPT SCHEDULE AFTER DEBT RESTRUCTURING
EFFECTIVE INTEREST RATE 12%

Date	Cash Interest (10%)	Effective Interest (12%)	Increase in Carrying Amount	Carrying Amount of Note
12/31/17				$1,808,730
12/31/18	$190,000[a]	$217,047[b]	$27,047[c]	1,835,777
12/31/19	190,000	220,293	30,293	1,866,070
12/31/20	190,000	223,930	33,930	1,900,000
Total	$570,000	$661,270	$91,270	

[a]$1,900,000 X 10% = $190,000.
[b]$1,808,730 X 12% = $217,047.
[c]$217,047 – $190,000 = $27,047.

(d) Interest receipt entry for Green Bank is:

	December 31, 2019	
Cash	190,000	
Notes Receivable	30,293	
Interest Income		220,293

(e) The receipt entry at maturity is:

	January 1, 2021	
Cash	1,900,000	
Notes Receivable		1,900,000

EXERCISE 14-26 (25-30 minutes)

(a) The first step is to determine the economic substance of the debt renegotiation and determine if it should be accounted as a settlement or a modification/exchange regarding the old debt. In this case, the creditor is the same and so is the currency and therefore the test to establish whether there is a settlement or not revolves around the cash flows. The present value of the cash flow streams of the new debt are calculated using the historical interest rate of 12% for consistency and comparability.

Present value of old debt is $2,000,000.
Present value of new debt is calculated as follows:

1) Using tables:		**12% Factor**	**Present Value**
Single amount	**$ 1,600,000**	**0.71178**	**$ 1,138,848**
Interest annuity	**160,000**	**2.40183**	**384,293**
			$ 1,523,141

2) Using a financial calculator:

PV	**$?**	**Yields $1,523,141**
I	**12%**	
N	**3**	
PMT	**$ (160,000)**	
FV	**$ (1,600,000)**	
Type	**0**	

EXERCISE 14-26 (CONTINUED)

(a) (continued)

3) Using Excel: =PV(rate,nper,pmt,fv,type)

Since the present value of the future cash flows of the new debt of $1,523,141 differs by an amount larger than 10% of the present value of the future cash flows of the old debt in the amount of $2,000,000, the renegotiated debt is considered a settlement and Troubled records a gain.

(b)

Notes Payable	2,000,000	
Gain on Restructuring of Debt .		400,000
Notes Payable		1,600,000

(c) The new debt would be recorded at the present value of the new cash flows at the current market rate of 10%. Therefore, Troubled should use the current market rate of 10% to calculate its interest expense in future periods. In E14-24, the renegotiated debt was not considered a settlement, and a new effective interest rate was imputed by equating the carrying amount of the original debt with the present value of the revised cash flows.

(d) The interest payment schedule is prepared as follows:

TROUBLED INC.
INTEREST PAYMENT SCHEDULE AFTER DEBT RESTRUCTURING
EFFECTIVE INTEREST RATE 10%

Date	Cash Interest (10%)	Effective Interest (10%)	Reduction of Carrying Amount	Carrying Amount of Note
12/31/17				$1,600,000
12/31/18	$160,000[a]	$160,000	-	1,600,000
12/31/19	160,000	160,000	-	1,600,000
12/31/20	160,000	160,000	-	1,600,000
Total	$480,000	$480,000		

[a] $1,600,000 X 10% = $160,000.

EXERCISE 14-26 (CONTINUED)

(e) Interest payment entries for Troubled Inc. are:

December 31, 2018 through 2020		
Interest Expense	**160,000**	
Cash		**160,000**

(f) The payment entry at maturity is:

January 1, 2021		
Notes Payable	**1,600,000**	
Cash		**1,600,000**

EXERCISE 14-27 (20-30 minutes)

(a) Green Bank needs to calculate the present value of the expected cash flows discounted at the historical effective interest rate, which in this case is 12%.

(b)

Pre-restructuring carrying amount of note	$2,000,000
Present value of restructured cash flows (below)	1,523,141
Loss on debt restructuring	$ 476,859

1) Using tables:

		12% Factor	Present Value
Single amount	$ 1,600,000	0.71178	$ 1,138,848
Interest annuity	160,000	2.40183	384,293
			$ 1,523,141

2) Using a financial calculator:

PV	$?	Yields $1,523,141
I	12%	
N	3	
PMT	$ (160,000)	
FV	$ (1,600,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

(b)

	December 31, 2017	
Modification Gain or Loss	476,859	
Notes Receivable		476,859

EXERCISE 14-28 (20–25 minutes)

The first step is to determine the economic substance of the debt renegotiation and determine if it should be accounted as a settlement or a modification/exchange regarding the old debt. In this case, the creditor is the same and so is the currency and therefore the test to establish whether there is a settlement or not revolves around the cash flows. The present value of the cash flow streams of the new debt are calculated using the historical interest rate of 12% for consistency and comparability.

Present value of old debt is $270,000.
Present value of new debt is calculated as follows:

1) Using tables:		**12% Factor**	**Present Value**
Single amount	**$ 220,000**	**0.79719**	**$ 175,382**
Interest annuity	**11,000**	**1.69005**	**18,591**
			$ 193,973

2) Using a financial calculator:

PV	**$?**	**Yields $193,973**
I	**12%**	
N	**2**	
PMT	**$ (11,000)**	
FV	**$ (220,000)**	
Type	**0**	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

Since the present value of the future cash flows of the new debt differs by an amount larger than 10% of the present value of the old debt, the renegotiated debt is considered a settlement. A gain/loss is recorded by Vargo (debtor) and no interest is recorded by the debtor. This is not considered a modification of terms. The old debt is removed from the books of Vargo with a gain/loss being recognized, and the new debt is recorded.

EXERCISE 14-28 (CONTINUED)

Vargo Corp.'s entries:

2017	**Notes Payable .....**	**270,000**	
	Gain on Restructuring of Debt		**50,000**
	Notes Payable.....		**220,000**
2018	**Interest Expense .....**	**11,000**	
	Cash (5% X $220,000).....		**11,000**
2019	**Interest Expense…….**	**11,000**	
	Cash……..		**11,000**
2020	**Notes Payable……**	**220,000**	
	Cash……..		**220,000**

EXERCISE 14-29 (15-20 minutes)

(a) IFRS

1. **Current liability since the operating cycle of the winery is 5 years.**
2. **Current liability, $2,000,000; long-term liability, $8,000,000.**
3. **Current liability (amount actually held in trust).**
4. **Probably noncurrent, although if operating cycle is greater than one year and current assets are reported based on this longer period, this item would be classified as current.**
5. **Interest payable is a current liability and the note payable is noncurrent liability.**
6. **Current liability.**
7. **Noncurrent liability.**
8. **Current liability.**
9. **Current asset – netted against other cash balances.**
10. **Current liability.**

(b) ASPE

No differences. All of the above IFRS classifications would be the same under ASPE.

EXERCISE 14-30 (15-20 minutes)

(a) IFRS

1. **Interest expense (debit balance)—"Interest expense" on the income statement.**
2. **Loss on restructuring of debt— If "Loss on restructuring of debt" does not occur frequently, it is still presented as part of "Income from continuing operations". If it is not material in amount, it is combined with the other items in the income statement. If it is material, it is disclosed separately.**
3. **Mortgage payable—Classify full amount as long-term liability on the statement of financial position.**
4. **Debenture bonds—Classify as current liability on statement of financial position since the covenant was breached, making the amount immediately owing. Since the waiver was received after year end, must still be current.**
5. **Promissory notes payable—Classify 1/10 of the balance as current portion of promissory notes payable, and remaining balance as long-term liability on statement of financial position.**
6. **Income bonds payable—Classify full amount as current liability on the statement of financial position.**

(b) ASPE

Except for number 4, no differences. All of the above IFRS classifications would be the same under ASPE.

Under number 4, since the waiver was received after year end but before the financial statements were issued, ASPE would allow the debentures to still be presented as long term on the balance sheet.

EXERCISE 14-31 (10-15 minutes)

At December 31, 2017, disclosures would be as follows:

Long-term debt consists of the following:	
Notes payable, due June 30, 2020	**$2,200,000**
Bond, due September 30, 2021	**4,000,000**
Debenture	**17,500,000**
	$23,700,000

The debenture has annual sinking fund payments of $3,500,000 in each of the years 2019 to 2023.

Maturities and sinking fund requirements on long-term debt are as follows:

2018	**$ 0**	
2019	**3,500,000**	
2020	**5,700,000**	**($2,200,000 + $3,500,000)**
2021	**7,500,000**	**($4,000,000 + $3,500,000)**
2022	**3,500,000**	
Thereafter	**3,500,000**	

Note: The company would also need to disclose interest rates for each liability, collateral if any, covenants and any other significant details in the debt agreements.

TIME AND PURPOSE OF PROBLEMS

Problem 14-1 (Time 30-35 minutes)

Purpose—to provide the student with an opportunity to become familiar with the exchange of an instalment note, which is payable in equal instalments, for raw materials to construct equipment. This problem requires the preparation of the necessary journal entries concerning the exchange and the annual payments and interest. A schedule of note discount amortization should be constructed to support the respective entries.

Problem 14-2 (Time 50-60 minutes)

Purpose—to provide the student with the opportunity to contrast the terms of a long-term note given in exchange for the purchase of land. The discussion of risk and financial statement disclosure is included as part of the required for this question. The preparation of effective interest tables for both alternatives is intended to draw the student's attention to the differences in the treatment of principal and interest between a regular note and an instalment note payable. Journal entries and adjusting journal entries and the statement of financial position disclosure must also be prepared under both alternatives. This is a comprehensive question.

Problem 14-3 (Time 15-20 minutes)

Purpose—to provide the student with the opportunity to interpret a bond amortization schedule. This problem requires both an understanding of the function of such a schedule and the relevance of each of the individual numbers. The student is to prepare journal entries to reflect the information given in the bond amortization schedule.

Problem 14-4 (Time 25–30 minutes)

Purpose—to provide the student with an understanding of how to make the journal entry to record the issuance of bonds. In addition, a portion of the bonds are retired and therefore a bond amortization schedule has to be prepared. Student must also deal with accounting for the costs of issuing a bond and the fair value method.

TIME AND PURPOSE OF PROBLEMS (CONTINUED)

Problem 14-5 (Time 50-65 minutes)

Purpose—to provide the student with an understanding of the relevant journal entries which are necessitated for a bond issuance. This problem involves two independent bond issuances with the assumption that one is sold at a discount and the other at a premium, both utilizing the effective interest method. This comprehensive problem requires preparing journal entries for the issuance of bonds, related interest payments and amortization (with the construction of amortization tables where applicable), and the retirement of part of the bonds.

Problem 14-6 (Time 30-35 minutes)

Purpose—to provide the student with an understanding of the relevant journal entries, for a bond issuance and partial bond retirement. This problem requires preparing journal entries, assuming the straight-line method, for the issuance of bonds, related interest payments and amortization, and the retirement of part of the bonds. The student must also comment on any differences that would be addressed under IFRS.

Problem 14-7 (Time 15-25 minutes)

Purpose—to provide the student with an opportunity to become familiar with the exchange of notes for cash or property, goods, or services. This problem requires the preparation of the necessary journal entries concerning the exchange of a non-interest-bearing long-term note for a computer software system, and the necessary adjusting entries relative to amortization. The student should construct the relevant schedule of note discount amortization to support the respective entries. Finally, the effect of issuing debt on the debt to total asset ratio is calculated.

Problem 14-8 (Time 55–65 minutes)

Purpose—to provide the student with an understanding of the various accounts which are generated in a non-market rate bond issue, the financing of the purchase of machinery with an intalment loan, a government loan with a near zero interest rate and the treatment of the repurchase of bonds issued earlier in the year. Justification must be provided for the treatment accorded to accounts in relation to the specifics of this case.

TIME AND PURPOSE OF PROBLEMS (CONTINUED)

Problem 14-9 (Time 15-20 minutes)

Purpose—to provide the student with an understanding of the relevant journal entries which are necessitated when there is a bond issuance and bond retirement. This problem also provides an opportunity for the student to learn the income statement treatment of the loss from retirement and the footnote disclosure required.

Problem 14-10 (Time 20-25 minutes)

Purpose—to provide the student with an understanding of a number of areas related to bonds. Specifically, the classification of bonds, determination of cash received with bond issue costs and accrued interest, and disclosure requirements**.**

Problem 14-11 (Time 30-35 minutes)

Purpose—to provide the student with a series of transactions from bond issuance, payment of bond interest, accrual of bond interest, amortization of bond discount, and bond retirement. Journal entries are required for each of these transactions.

Problem 14-12 (Time 20-25 minutes)

Purpose—to provide the student the same opportunity as those given in Problem 14-11 except that the effective interest method will be used. The student will be required to calculate the effective interest rate on the bond using either a financial calculator or Excel function. The preparation of a partial effective interest table is also required.

Problem 14-13 (Time 45-50 minutes)

Purpose—to provide the student with an understanding of the relevant journal entries which are necessitated for a bond issuance. This problem involves two independent bond issuances with the assumption that one is sold at a discount and the other at a premium, both utilizing the effective interest method. This comprehensive problem requires preparing journal entries for the issuance of bonds, related interest payments and amortization (with the construction of amortization tables where applicable), and the retirement of part of the bonds.

TIME AND PURPOSE OF PROBLEMS (CONTINUED)

Problem 14-14 (Time 30-40 minutes)

Purpose—to provide the student with a loan impairment situation that requires entries by both the debtor and the creditor and an analysis of the loss on impairment.

Problem 14-15 (Time 15-25 minutes)

Purpose—to provide the student with a troubled debt situation that requires calculation of the creditor's loss on restructure, entries to recognize the loss, and discussion of GAAP relating to this situation.

Problem 14-16 (Time 50-60 minutes)

Purpose—to provide the student with four independent and different restructured debt situations where losses or gains must be computed and journal entries recorded on the books of the creditor and the debtor.

Problem 14-17 (Time 40-50 minutes)

Purpose—to provide the student with a restructuring of a troubled debt situation requiring computation of the creditor's loss and entries by both the debtor and creditor before and after restructuring along with an amortization schedule.

Problem 14-18 (Time 30-35 minutes)

Purpose—to provide the student with a situation where troubled debt is sold to another creditor. The student must prepare entries on the books of both creditors and debtors after computing any gains or losses.

Problem 14-19 (Time 40-50 minutes)

Purpose—to provide the student with a complex troubled debt situation that requires two amortization schedules, computation of loss on restructure, and entries at different times on both the creditor's and debtor's books.

TIME AND PURPOSE OF PROBLEMS (CONTINUED)

Problem 14-20 (Time 15–20 minutes)

Purpose—to provide the student with an opportunity to advise management on the legal, accounting and reporting issues concerning derecognition of debt on the statement of financial position. Legal defeasance and in-substance defeasance are contrasted in this case.

SOLUTIONS TO PROBLEMS

PROBLEM 14-1

(a)

(1)

12/31/17	Equipment.....	1,277,930	
	Cash		500,000
	Notes Payable		777,930

[To record purchase of raw material (metal) for construction of equipment at the present value of the note plus the immediate cash payment:]

1) Using tables:

PV of $200,000 annuity @ 9% for 5 years ($200,000 X 3.88965)	$ 777,930
Down payment	500,000
Capitalized value of metals	$ 1,277,930

2) Using a financial calculator:

PV	$?	Yields $777,930
I	9%	
N	5	
PMT	$ (200,000)	
FV	$ 0	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

PROBLEM 14-1 (CONTINUED)

(a) (continued)

Schedule of Note Discount Amortization

Date	Debit, Interest Expense Credit, Notes Payable	Credit Cash	Carrying Amount of Note
12/31/17			$777,930
12/31/18	$70,014	$200,000	647,944*
12/31/19	58,315	200,000	506,259
12/31/20	45,563	200,000	351,822
12/31/21	31,664	200,000	183,486
12/31/22	16,514	200,000	—

*$647,944 = $777,930 + $70,014 – $200,000.

(2)

12/31/18	Notes Payable	129,986	
	Interest Expense	70,014	
	Cash		200,000

(3)

12/31/19	Notes Payable	141,685	
	Interest Expense	58,315	
	Cash		200,000

(4)

12/31/20	Notes Payable	154,437	
	Interest Expense	45,563	
	Cash		200,000

(5)

12/31/21	Notes Payable	168,337	
	Interest Expense	31,664	
	Cash		200,000

PROBLEM 14-1 (CONTINUED)

(a) (continued)

(6)

12/31/22	Notes Payable	183,486	
	Interest Expense	16,514	
	Cash		200,000

(b) From the perspective of the lender, an instalment note provides for a reduced risk of collection when compared to an interest-bearing note. In the case of the interest-bearing note, the principal amount is due at the maturity of the note. Further, the instalment note provides a regular reduction of the principal balance in every payment received annually and therefore reduces the lender's investment in the receivable, freeing up the cash for other purposes. This is demonstrated in the schedule of discount amortization provided above for the instalment note.

PROBLEM 14-2

(a) The value of the land should be recorded at the present value of the future cash flows of the note given in exchange for the land. The asking price for the land is higher than the real purchase price. There is some flexibility to negotiate a reduction in the asking price for the land for sale by Silverman Corporation. The relevant interest rate to impute on the note is the interest rate to MacDougall who is the borrower in this case. The relevant interest rate is therefore 10%. The interest rate called for in the note of 4% is very low in relation to a fair market rate of interest.

(b) A mortgage note involves the registering of a charge against the property, in this case land, whereas a promissory note alone offers no reduction of risk to Silverman Corporation. Should MacDougall fail to pay the note within the terms, Silverman Corporation can obtain recourse through the court and obtain the asset, or the proceeds from the resale of the asset, as satisfaction for the outstanding principal and interest owing on the mortgage note. A promissory note alone does not offer this potential relief to the creditor and is therefore a higher credit risk to Silverman Corporation.

(c) The land is capitalized at the present value of a single payment at the end of five years of $300,000 plus the annuity interest payments of $12,000 per year for 5 years, imputed at 10% interest.

1) Using tables:

$300,000 X .62092 =	$186,276
$12,000 X 3.79079 =	45,490
Present value	$231,766

PROBLEM 14-2 (CONTINUED)

(c) (continued)

2) Using a financial calculator:

PV	$?	Yields $231,766
I	10%	
N	5	
PMT	$ (12,000)	
FV	$ (300,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

Mortgage Note Payable – interest paid at 4%

Date	4% Cash Paid	10% Interest Expense	Discount Amortized	Note Carrying Amount
June 1 2017				$231,765.84
June 1 2018	$12,000.00	$23,176.58	$11,176.58	242,942.42
June 1 2019	12,000.00	24,294.24	12,294.24	255,236.66
June 1 2020	12,000.00	25,523.67	13,523.67	268,760.33
June 1 2021	12,000.00	26,876.03	14,876.03	283,636.36
June 1 2022	12,000.00	28,363.64	16,363.64	300,000.00
		$128,234.16	$68,234.16	

(d)

	June 1, 2017		
Land.....		231,766	
Notes Payable			231,766

PROBLEM 14-2 (CONTINUED)

(e)

December 31, 2017		
Interest Expense	13,519.67	
Notes Payable		6,519.67
Interest Payable		7,000.00
($23,176.58 X 7/12 = $13,519.67)		
($11,176.58 X 7/12 =$6,519.67)		
June 1, 2018		
Interest Expense	9,656.91	
Interest Payable	7,000.00	
Notes Payable		4,656.91
Cash		12,000.00
($23,176.58 X 5/12 = $9,656.91)		
($11,176.58 X 5/12 =$4,656.91)		

(f) 1. Using the alternative of the instalment note, the land is capitalized at the present value of the annuity payment at the end of each of the next five years which will correspond to the same value as that arrived at for the mortgage note, imputed at 10% interest. The present value is $231,766.

1) Using tables:

$$\$231,766 \div 3.79079\ (PVOA_{5,\ 10\%}) = \$61,139.23$$

2) Using a financial calculator:

PV	$ 231,766	
I	10%	
N	5	
PMT	$?	Yields $(61,139.24)
FV	$ 0	
Type	0	

3) Using Excel: =PMT(rate,nper,pv,fv,type)

PROBLEM 14-2 (CONTINUED)

(f) (continued)

2.

Instalment Note Payable

Date		Cash Paid	10% Interest Expense	Discount Amortized	Note Carrying Amount
June 1	2017				$231,765.84
June 1	2018	$61,139.24	$23,176.58	$37,962.66	193,803.18
June 1	2019	61,139.24	19,380.32	41,758.93	152,044.25
June 1	2020	61,139.24	15,204.43	45,934.82	106,109.43
June 1	2021	61,139.24	10,610.94	50,528.30	55,581.13
June 1	2022	61,139.24	5,558.11	55,581.13	0.00
			$73,930.38	$231,765.84	

3.

June 1, 2017			
Land		231,766	
Notes Payable			231,766

4.

December 31, 2017			
Interest Expense		13,519.67	
Interest Payable			13,519.67
($23,176.58 X 7/12 = $13,519.67)			
June 1, 2018			
Interest Expense		9,656.91	
Interest Payable		13,519.67	
Notes Payable		37,962.66	
Cash			61,139.24

PROBLEM 14-2 (CONTINUED)

(f) (continued)

5. The classification of the Mortgage Note on the December 31, 2017 statement of financial position is:

Current liabilities:	
Interest payable	$7,000
Non-current liabilities:	
Mortgage note payable, due June 1, 2022 ($231,766 + $6,520)	238,286

The classification of the Instalment Note on the December 31, 2017 statement of financial position is:

Current liabilities:	
Interest payable	$13,519
Instalment note payable, current portion	37,963
Non-current liabilities:	
Instalment note payable, (due in annual payments of $61,139 ending June 1, 2022) ($231,766 – $37,963)	193,803

6. Silverman Corporation would insist on the instalment note in order to secure larger cash inflows during the term of the note and to reduce the risk of having to collect the note principal in the case of a default by MacDougall.

PROBLEM 14-3

(a) The bonds were sold at a discount of $5,651. Evidence of the discount is the January 1, 2017 carrying amount of $94,349, which is less than the maturity value of $100,000 in 2026.

(b) The interest allocation and bond discount amortization are based upon the effective interest method; this is evident from the increasing interest charge. Under the straight-line method the amount of interest would have been $11,565.10 [$11,000 + ($5,651 ÷ 10)] for each year of the term of the bonds.

Although the effective interest method is required under IFRS per IFRS 9.5.4.1, accounting standards for private enterprises do not specify that this method must be used and therefore, the straight-line method is also an option. The straight-line method is valued for its simplicity and might be used by companies whose financial statements are not constrained by this specific element of GAAP.

(c) The stated rate is 11% ($11,000 ÷ $100,000). The effective rate is 12% ($11,322 ÷ $94,349).

(d)

	January 1, 2017	
Cash	94,349	
Bonds Payable		94,349

(e)

	December 31, 2017	
Interest Expense	11,322	
Bonds Payable		322
Interest Payable		11,000

(f)

	January 1, 2025 (Interest Payment)	
Interest Payable	11,000	
Cash		11,000

	December 31, 2025	
Interest Expense	11,797	
Bonds Payable		797
Interest Payable		11,000

PROBLEM 14-4

(a) The present value of the future cash flows totals $2,061,440.

1) Using tables:

Present value of the principal $2,000,000 X .38554 ($PV_{10, 10\%}$)	$771,080
Present value of the interest payments $210,000* X 6.14457 ($PVOA_{10, 10\%}$)	1,290,360
Present value (selling price of the bonds)	$2,061,440

*$2,000,000 X 10.5% = $210,000

2) Using a financial calculator:

PV	$?	Yields $2,061,446
I	10%	
N	10	
PMT	$ (210,000)	
FV	$ (2,000,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

=PV(.10,10,-210,000,-2,000,000,0) where .10 designates the interest rate (Rate), the 10 is for the term (Nper), the outflow of $210,000 is the annuity payment (Pmt) based on the 10.5% interest rate, the outflow of $2,000,000 is future value (Fv), and the zero designates that the annuity is a regular annuity (Type).

Cash	2,011,440	
Bonds Payable ($2,000,000 + $61,440 – $50,000)		2,011,440

PROBLEM 14-4 (CONTINUED)

(b)

Date	Cash Payment 10.5%	Interest Expense 10.4053%	Discount Amortiza-tion	Carrying Amount of Bonds
1/1/17				$2,011,440
1/1/18	$210,000	$209,296	$704	2,010,736
1/1/19	210,000	209,223	777	2,009,959
1/1/20	210,000	209,142	858	2,009,101
1/1/21	210,000	209,053	947	2,008,154
1/1/22	210,000	208,954	1,046	2,007,108

(c)	Carrying amount as of 1/1/20	$2,009,101
	Less: Amortization of bond premium ($947 ÷ 2)	474
	Carrying amount as of 7/1/20	$2,008,627
	Reacquisition price	$1,065,000
	Carrying amount as of 7/1/20 of bond ($2,008,627 ÷ 2)	(1,004,314)
	Loss on Redemption	$ 60,686

Entry for accrued interest

Interest Expense	52,263	
Bonds Payable ($947 X 1/2 X 1/2)	237	
Cash ($210,000 X 1/2 X 1/2)		52,500

PROBLEM 14-4 (CONTINUED)

(c) (continued)

Entry for reacquisition

Bonds Payable	1,000,000	
Loss on Redemption of Bonds	60,686	
Bonds Payable*	4,314	
Cash		1,065,000

*Premium as of 7/1/20 to be written off
($2,008,627 – $2,000,000) X 1/2 = $4,314

(d) By choosing to carry the bonds at fair value and expensing the costs of issuing the bond in the amount of $50,000, the premium on bonds payable would increase at the date of issuance by the $50,000 expensed at issue. Correspondingly, the interest expense recorded each year would be lower by the amount charged to expense using the effective interest method for the amortization of the additional $50,000 (the effective interest rate would be 10% instead of the 10.4953% required due to the capitalization of the bond issue costs). In total, the periodic expense would be lower over the 10-year term of the bond by $50,000, equal to the expense recognized at issuance. The total costs would be ultimately charged to income. The only difference would be that the charge would be completely expensed in the year the bond was issued as opposed to spread over the ten-year term of the bond.

Note: When a note or bond is issued, it should be recognized at the fair value adjusted by any directly attributable issue costs. However, note that where the liabilities will subsequently be measured at fair value (e.g., under the fair value option or because they are derivatives), the transaction costs should not be included in the initial measurement (i.e., the costs should be expensed) [*CPA Canada Handbook*, Part II, Section 3856.07 and IFRS 9.5.1.1].

PROBLEM 14-5

1. Armstrong Inc.

3/1/17	Cash	1,888,352	
	Bonds Payable.....		1,888,352

Maturity value of bonds payable $2,000,000

1) Using tables:

Present value of $2,000,000 due in 7 periods at 6% ($2,000,000 X .66506)	$1,330,120	
Present value of interest payable Semiannually at 6% ($100,000 X 5.58238)	558,238	
Proceeds from sale of bonds		(1,888,358)
Discount on bonds payable		$111,642

2) Using a financial calculator:

		Yields
PV	$?	$1,888,352
I	6%	
N	7	
PMT	$ (100,000)	
FV	$ (2,000,000)	
Type	0	

3) Using Excel: = PV(rate,nper,pmt,fv,type)

A more accurate result is obtained compared to using factors from tables as there are a limited number of decimal places in the tables.

9/1/17	Interest Expense.....	113,301	
	Bonds Payable		13,301
	Cash.....		100,000

PROBLEM 14-5 (CONTINUED)

1. Armstrong Inc. (continued)

12/31/17	Interest Expense	76,066	
	Bonds Payable ($14,099 X 4/6)		9,399
	Interest Payable ($100,000 X 4/6)		66,667
3/1/18	Interest Expense	38,033	
	Interest Payable	66,667	
	Bonds Payable ($14,099 X 2/6)		4,700
	Cash		100,000
9/1/18	Interest Expense	114,945	
	Bonds Payable		14,495
	Cash		100,000
12/31/18	Interest Expense	77,228	
	Bonds Payable ($15,842 X 4/6)		10,561
	Interest Payable		66,667

Schedule of Bond Discount Amortization
Effective Interest Method
10% Bonds Sold to Yield 12%

Date	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
3/1/17				$1,888,352
9/1/17	$100,000	$113,301	$13,301	1,901,654
3/1/18	100,000	114,099	14,099	1,915,753
9/1/18	100,000	114,945	14,945	1,930,698
3/1/19	100,000	115,842	15,842	1,946,540
9/1/19	100,000	116,792	16,792	1,963,332
3/1/20	100,000	117,800	17,800	1,981,132
9/1/20	100,000	118,868	18,868	2,000,000

PROBLEM 14-5 (CONTINUED)

2. Ouelette Ltd.

6/1/17	Cash	6,193,896	
	Bonds Payable		6,193,896

The present value of the future cash flows totals $6,193,896.38.

1) Using tables:

Maturity value of bonds payable		$6,000,000
Present value of $6,000,000 due in 8 periods at 5% ($6,000,000 X .67684)	$4,061,040	
Present value of interest payable semiannually ($330,000 X 6.46321)	2,132,859	
Proceeds from sale of bonds		6,193,899
Premium on bonds payable		$ 193,899

2) Using a financial calculator:

PV	$?	Yields $6,193,896
I	5%	
N	8	
PMT	$ (330,000)	
FV	$ (6,000,000)	
Type	0	

3) Using Excel: =PV (rate, nper, pmt, fv, type)

=PV(.05,8,-330,000,-6,000,000,0) where .05 designates the interest rate (Rate), the 8 is for the term (Nper), the outflow of $330,000 is the annuity payment (Pmt), the outflow of $6,000,000 is future value (Fv) the zero designates that the annuity is a regular annuity (Type).

PROBLEM 14-5 (CONTINUED)

2. Ouelette Ltd. (continued)

12/1/17	Interest Expense	309,695	
	Bonds Payable	20,305	
	Cash ($6,000,000 X .11 X 6/12)....		330,000
12/31/17	Interest Expense ($308,680 X 1/6)....	51,447	
	Bond Payable.....	3,553	
	($21,320 X 1/6)		
	Interest Payable ($330,000 X 1/6).....		55,000
6/1/18	Interest Expense ($308,680 X 5/6)....	257,233	
	Interest Payable	55,000	
	Bonds Payable.....	17,767	
	($21,320 X 5/6)		
	Cash.....		330,000
10/1/18	Interest Expense	41,015	
	($307,614 X .2* X 4/6)		
	Bonds Payable.....	2,985	
	($22,386 X .2 X 4/6)		
	Cash		44,000
	($330,000 X .2* X 4/6)		
	*$1,200,000 ÷ $6,000,000 = .2		
10/1/18	Bonds Payable.....	1,200,000	
	Bonds Payable.....	27,469	
	Loss on Redemption of Bonds	128,531	
	Cash		1,356,000

Reacquisition price		
($1,400,000 – $44,000)		$1,356,000
Net carrying amount of bonds redeemed:		
Par value	$1,200,000	
Unamortized premium		
[.2 X ($193,896–$20,305–$21,320)] – $2,985	27,469	(1,227,469)
Loss on redemption		$ 128,531

PROBLEM 14-5 (CONTINUED)

2. Ouelette Ltd. (continued)

12/1/18	Interest Expense ($307,614 X .8*)	246,091	
	Bonds Payable ($22,386 X .8)	17,909	
	Cash ($330,000 X .8).....		264,000
	*($6,000,000 – $1,200,000) ÷ $6,000,000 = .8		
12/31/18	Interest Expense.....	40,866	
	($306,494 X .8 X 1/6)		
	Bonds Payable.....	3,134	
	($23,506 X .8 X 1/6)		
	Interest Payable.....		44,000
	($330,000 X .8 X 1/6)		
6/1/19	Interest Expense ($306,494 X .8 X 5/6) ...	204,329	
	Interest Payable.....	44,000	
	Bonds Payable.....	15,671	
	($23,506 X .8 X 5/6)		
	Cash ($330,000 X .8).....		264,000
12/1/19	Interest Expense ($305,319 X .8).....	244,255	
	Bonds Payable ($24,681 X .8)	19,745	
	Cash ($330,000 X .8).....		264,000

Date	Cash Paid	Interest Expense	Premium Amortized	Carrying Amount of Bonds
6/1/17				$6,193,896
12/1/17	$330,000	$309,695	$20,305	6,173,591
6/1/18	330,000	308,680	21,320	6,152,271
12/1/18	330,000	307,614	22,386	6,129,885
6/1/19	330,000	306,494	23,506	6,106,379
12/1/19	330,000	305,319	24,681	6,081,698
6/1/20	330,000	304,085	25,915	6,055,783
12/1/20	330,000	302,789	27,211	6,028,572
6/1/21	330,000	301,428	28,572	6,000,000

PROBLEM 14-6

(a)

May 1, 2017		
Cash	763,000	
($700,000 X 105%) + ($700,000 X 12% X 4/12)		
Bonds Payable ($700,000 X 105%)		735,000
Interest Expense ($700,000 X 12% X 4/12)		28,000
December 31, 2017		
Interest Expense ($700,000 X 12%).....	84,000	
Interest Payable		84,000
Bonds Payable.....	2,414	
Interest Expense		2,414
($35,000 X 8/116* = $2,414)		
*(12 X 10) – 4 = 116		
January 1, 2018		
Interest Payable	84,000	
Cash		84,000
April 1, 2018		
Bonds Payable.....	543	
Interest Expense		543
($35,000 X 3/116 X .60*)		
*$420,000 / $700,000 = .60		
Bonds Payable.....	439,009*	
Interest Expense ($420,000 X .12 X 3/12)...	12,600	
Cash ($432,600 + $12,600)		445,200
Gain on Redemption of Bonds		6,409**

* next page

**[($420,000 + $19,009) – $420,000 X 103%)] – next page

PROBLEM 14-6 (CONTINUED)

(a) (continued)

Reacquisition price (including accrued interest)	
($420,000 X 103%) + ($420,000 X 12% X 3/12)	$445,200
Net carrying amount of bonds redeemed:	
Par value.....	420,000
Unamortized premium	
[$35,000 X ($420,000 ÷ $700,000) X 105/116].....	19,009
Net carrying amount of bonds redeemed*	439,009
Accrued interest ($420,000 X 12% X 3/12)	12,600
	451,609
Gain on redemption.....	$ 6,409

	December 31, 2018	
Interest Expense ($280,000 X .12).....	33,600	
Interest Payable		33,600
Bonds Payable.....	1,448	
Interest Expense		1,448

Amortization per year on $280,000	
($35,000 X 12/116 X .40*).....	$1,448

* ($700,000 – $420,000) ÷ $700,000 = .40

(b) If Pfaff were to follow IFRS, then the effective interest method must be used to amortize any discounts or premiums. Although the effective interest method is required under IFRS per IFRS 9.5.4.1, accounting standards for private enterprises do not specify that this method must be used and therefore, the straight-line method is also an option. The straight-line method is valued for its simplicity and might be used by companies whose financial statements are not constrained by this specific element of GAAP.

PROBLEM 14-7

(a) December 31, 2017

Machinery	409,806	
Notes Payable		409,806
(Machine capitalized at the present value of the note)		

1) Using tables: $600,000 X .68301

2) Using a financial calculator:

PV	$?	Yields $409,808
I	10%	
N	4	
PMT	$ 0	
FV	$ (600,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

(b) December 31, 2018

Depreciation Expense	67,961	
Accumulated Depreciation—Machinery		67,961
[($409,806 – $70,000) ÷ 5]		
Interest Expense	40,981	
Notes Payable		40,981

Schedule of Note Discount Amortization

Date	Debit, Interest Expense Credit Notes Payable	Carrying Amount of Note
12/31/17		$409,806.00
12/31/18	$40,980.60	450,786.60
12/31/19	45,078.66	495,865.26
12/31/20	49,586.53	545,451.79
12/31/21	* 54,548.21	600,000.00

* $3.03 adjustment due to rounding

PROBLEM 14-7 (CONTINUED)

(c)

December 31, 2019		
Depreciation Expense	67,961	
Accumulated Depreciation—Machinery		67,961
Interest Expense	45,079	
Notes Payable		45,079

(d) Debt to total assets is a measure of debt-paying ability and long-run solvency. Prior to purchasing the machine, the company's debt to total assets ratio was 48.2% ($432,000 ÷ $896,000). As a result of the purchase, the debt to total assets ratio increased to 64.5% [($432,000 + $409,806) ÷ ($896,000 + $409,806)]. The percentage of total assets provided by creditors increased, which a creditor would view as unfavourable. The creditor may also consider that while the non-interest bearing note payable is included in debt in the debt to total assets ratio, it will not result in cash outflow until it is due in four years.

PROBLEM 14-8

(a) Machine purchased as an instalment sale. In this case, this is a debt instrument exchanged for the machine. The fair value of the debt must be determined discounting the cash flows required on the debt at the appropriate rate to reflect the credit risk of Thompson. Because this is a private company, with no credit rating, we would not be able to observe market risk assessment rates for this company. We have used unobservable data that is particular to this company only, which would be level 3 in the fair value hierarchy. We are told that the company could have borrowed funds at 7% from the bank for this same purchase. If we use 7.0% rate to discount the cash flows on the debt, the present value can be determined as follows:

Payment Jan 1, 2017	$ 240,000
Present value of 4 annual payments of $240,000 at 7% $240,000 X 3.3872	812,928
Total	$1,052,928

1) Using tables:
Present value of 4 annual payments of $240,000 at 7% $240,000 X 3.3872 = 812,928

2) Using a financial calculator:

PV	$?	Yields $812,931
I	7%	
N	4	
PMT	($ 240,000)	
FV	$ 0	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

PROBLEM 14-8 (CONTINUED)

(a) (continued)

This fair value determination would be a “soft” value since the 7% interest rate is a proposed (versus actual) lending rate. However, we are also told that the fair value of the machine is only $1,050,000. This is an observable market value for similar assets. As such, this input is a level 2 fair value hierarchy. And again, this fair value would be considered a “soft” value. The question becomes, what fair value should be used – the fair value of what is given up (the debt) or the fair value of what has been received (the machine). ASPE and IFRS recommend that the fair value of the consideration given up should be used to determine the value of the transaction unless the fair value of the item received is more reliable and more clearly evident. In this case, both of the fair values, as discussed above are both estimates, and one is not more reliable than the other.

As such, the value of the debt which has been given up is determined to be reliably determinable and is used to value the transaction. The treatment under ASPE and IFRS would be the same.

January 1, 2017 - Record purchase of the machine as follows:

Machinery	1,052,928	
Cash		240,000
Notes Payable.....		812,928

PROBLEM 14-8 (CONTINUED

(a) (continued)

December 31, 2017
Record the depreciation on the machine assuming a 10 year useful life and no residual value

Depreciation Expense ($1,052,928 / 10)	105,293	
Accumulated Depreciation – Machinery ...		105,293

December 31, 2017
Record accrued interest for 2017 using 7%

Interest Expense (7% X $812,928).....	56,905	
Interest Payable		56,905

Government loan – The government loan has been given at an interest rate substantially below market. The company would normally have had to pay 6% given its credit risk, but the government is charging 1%. To record the loan, we must determine the loan discounted at 6% and compare to the loan discounted at 1%.

	1%	6%	Difference
PV of 500,000 in 5 years	$475,733	$373,629	
PV of 5,000 annual payments for 5 years	24,267	21,062	
	$500,000	$394,691	$105,309

Journal entry to record the government funding December 31, 2017

Cash	500,000	
Notes Payable.....		394,691
Equipment.....		105,309

PROBLEM 14-8 (CONTINUED)

(a) (continued)

The grant of $105,309 will be amortized to net income on the same basis as the plant technology in order to offset the depreciation. Or alternatively, the grant can be directly netted against the plant technology equipment purchased and a smaller amount of depreciation will be recorded each year.

The note payable to the government will be amortized to interest expense over the five years, so that at the end of 5 years, the balance will be $500,000. Under IFRS, the effective interest rate of 6% will be used. Again, this rate is likely not observable in the market place since the company has no credit rating for comparison purposes. Consequently, this value is a level 3 in the fair value hierarchy.

(b) 1. Use of the asset requires a depreciation charge in each year of use. This in turn requires carrying the equipment as an asset as the risk and rewards of ownership have passed, although the company does not have legal title to the asset. The company has contracted to purchase the equipment and, thus, has a real liability which affects its financial condition and must be shown on the statement. As such, the fair value of the liability that the company owes must be recorded along with the fair value of the asset that has been received in return for the liability.

There is an imputed interest rate built into the payments over the 5 years that must be recorded. Since the fair value of the machine is only $1,050,000, then we cannot show a higher than fair value amount. Effectively, the difference between the total payments being made and the fair value of the machine is the interest to be paid over the 5-year period, in the amount of $147,072[($240,000 x 4) - $812,928].

PROBLEM 14-8 (CONTINUED)

(b) (continued)

2. The obligation of a company is to its bondholders, not to the trustee. Until the bondholders have received payment, the company still has a liability.

Note to instructor: The student may have difficulty with this statement because this type of situation was not discussed in the chapter. It therefore provides an opportunity to emphasize that payment to an agent or trustee does not constitute payment of the liability for bond interest. When the trustee dispenses the funds to bondholders, the liability should be reduced. A separate Bond Interest Fund account, similar to a "Sinking" fund is established at the time payment is made to the trustee. This fund is shown as a long-term investment in the asset section of the statement of financial position

3. Repurchased bonds are not an asset. A company cannot owe or own itself. Thus, these bonds are different from investments in bonds of other companies. Repurchased bonds should be reported as a deduction from bonds payable.

4. There are two points here. First of all, we obtained very favourable financing from the government, since we only must pay 1% on the loan and not 6% that we would have paid on borrowed funds. Consequently, this concession must be given separate treatment in our books. It is as though the government is forgiving 5% interest each year. The loan is recorded as though it was charging 6%, and therefore the payments we will make of $5,000 each year for the next 5 years and then the $500,000 repayment are part principal and part interest payments. An amount of $105,309 will be charged as interest over the 5-year period.

PROBLEM 14-8 (CONTINUED)

(b) 4. (continued)

The second point is what to do about this concession. The benefit of this will be treated as a government grant (i.e., forgiven amount of interest). As a grant, the amount is recorded either in a separate account or as a reduction against the equipment purchased. In either case, the “grant” is amortized into income over the life of the asset. Consequently, we will also have a lower depreciation charged to net income as a result. Over the five years, this reduction in the depreciation will be offset by the additional interest expense charged on the loan.

PROBLEM 14-9

(a)

Entry to record the issuance of the 8% mortgage on January 1, 2017:

Cash	3,030,000	
Mortgage Payable		3,030,000

($3 million x 101 = $3,030,000)

Entry to record the retirement of the 7% debenture bonds on January 1, 2017:

Bonds Payable	1,910,000	
Loss on Redemption of Bonds	190,000	
Cash ($2,000,000 x 105%)		2,100,000

At January 1, 2017 the carrying amount of the retired bonds is:

Bonds payable	$2,000,000
Less unamortized discount ($300,000 X 3/10)	90,000
Bond carrying amount	$1,910,000

(b)

Income from operations	$1,700,000
Loss on redemption of bonds (Note 1)	190,000
Income before taxes	1,510,000
Income tax expense	286,900
Net income	$1,223,100

Earnings per share:

Net income	$1.02

Note 1. Debenture Bonds Redemption:

A loss of $190,000 occurred from the redemption and retirement of $2,000,000 of the Corporation's outstanding debenture bonds issue due in 2020. The debentures were redeemed at 105% as provided for in the indenture. The funds used to repurchase the debentures represent a portion of the proceeds from the sale of $3,000,000 of 8% mortgage issued January 1, 2017 and due in 2042.

PROBLEM 14-10

(a)

Wilkie Inc.

Selling price of the bonds ($4,000,000 X 103%)	$4,120,000
Accrued interest from January 1 to February 28, 2018 ($4,000,000 X 9% X 2/12)	60,000
Total cash received from issuance of the bonds	4,180,000
Less: Bond issuance costs*	27,000
Net amount of cash received	$4,153,000

*When a note or bond is issued, it should be recognized at the fair value adjusted by any directly attributable issue costs. However, note that where the liabilities will subsequently be measured at fair value (e.g., under the fair value option or because they are derivatives), the transaction costs should not be included in the initial measurement (i.e., the costs should be expensed at the time of issuance) [*CPA Canada Handbook*, Part II, Section 3856.07 and IFRS 9.5.1.1].

(b)

Langley Ltd.

Carrying amount of the bonds on 1/1/17	$469,280
Effective interest rate (10%)	X 0.10
Interest expense to be reported for 2017	$ 46,928

Although the effective interest method is required under IFRS per IFRS 9.5.4.1, accounting standards for private enterprises do not specify that this method must be used and therefore, the straight-line method is also an option. The straight-line method is valued for its simplicity and might be used by companies whose financial statements are not constrained by this specific element of GAAP.

PROBLEM 14-10 (CONTINUED)

(c) Chico Building Inc.

2018	$400,000	2021	$200,000
2019	350,000	2022	350,000
2020	200,000	Thereafter	300,000

(d) Czeslaw Inc.
Since three bonds reported by Czeslaw Inc. are secured by either real estate, securities of other corporations, or plant equipment, there are no debenture bonds outstanding for the company.

PROBLEM 14-11

(a)

4/1/17	Cash (12,000 X $1,000 X 97%).....	11,640,000	
	Bonds Payable.....		11,640,000

(b)

10/1/17	Interest Expense	672,000	
	Cash		660,000*
	Bonds Payable.....		12,000**

*$12,000,000 X .11 X 6/12 = $660,000

**$360,000 ÷ 180 months
X 6 months = $12,000

(c)

12/31/17	Interest Expense	336,000	
	Interest Payable.....		330,000
	($660,000 X 3/6)		
	Bonds Payable		6,000
	($2,000 X 3 months)		

(d)

3/1/18	Interest Payable ($330,000 X ¼).....	82,500	
	Interest Expense	56,000	
	Cash		137,500*
	Bonds Payable		1,000**

*Cash paid to retiring
bondholders: $3,000,000
X .11 X 5/12 = $137,500

**$2,000/mo. X 2 months X
¼ of the bonds = $1,000

PROBLEM 14-11 (CONTINUED)

(d) (continued)

At March 1, 2018 the carrying amount of the retired bonds is:

Bonds payable	$3,000,000
Less: unamortized discount	84,500*
Bond carrying amount	$2,915,500

*$2,000/mo. X 169 months X ¼ of the bonds = $84,500

The reacquisition price: 100,000 shares X $31 = $3,100,000.

The loss on extinguishment of the bonds is:

Reacquisition price	$3,100,000
Less: carrying amount	2,915,500
Loss	$ 184,500

The entry to record extinguishment of the bonds is:

Bonds Payable.....	2,915,500	
Loss on Redemption of Bonds	184,500	
Common Shares.....		3,100,000

PROBLEM 14-12

1) Using a financial calculator:

PV	$ 11,640,000	
I	? %	Yields 5.7113 %
N	30	
PMT	$ (660,000)	
FV	$ (12,000,000)	
Type	0	

2) Using Excel: =RATE(nper,pmt,pv,fv,type)

Schedule of Bond Discount Amortization
Effective Interest Method
5.5% Semi-annual Bonds Sold to Yield 5.7113%

Date		5.5% Cash Paid	5.7113% Interest Expense	Discount Amortized	Carrying Amount
April 1	'17				$11,640,000.00
Oct. 1	'17	660,000.00	664,795.32	4,795.32	11,644,795.32
April 1	'18	660,000.00	665,069.20	5,069.20	11,649,864.52

(a)

4/1/17	Cash (12,000 X $1,000 X 97%)	11,640,000	
	Bonds Payable		11,640,000

(b)

10/1/17	Interest Expense	664,795.32	
	Cash		660,000.00
	Bonds Payable		4,795.32

PROBLEM 14-12 (CONTINUED)

(c)

12/31/17	Interest Expense*.....	332,534.60	
	Interest Payable.....		330,000.00
	($660,000 X 3/6)		
	Bonds Payable		2,534.60
	($5,069.20 X 3/6 = $2,534.60)		

*($665,069.20 X 3/6) = $332,534.60

(d)

3/1/18	Interest Payable ($330,000 X ¼)...	82,500.00	
	Interest Expense	55,422.43**	
	Cash		137,500.00*
	Bonds Payable.....		422.43***

* Cash paid to retiring bondholders:
($3,000,000 X .11 X 5/12) = $137,500

** ($665,069.20 X 2/6 X ¼) = $55,422.43

*** ($5,069.20 X 2/6 X ¼) = $422.43

At March 1, 2018 the carrying amount of the retired bonds is:

Bonds payable	$3,000,000.00
Less: unamortized discount	87,745.09*
Bonds carrying amount	$2,912,254.91

*Balance of Discount	100%		25%
Balance at issuance	$360,000.00		
Amortization Oct. 1, 2017	(4,795.32)		
Accrual December 31, 2017	(2,534.60)		
Balance December 31, 2017	$352,670.08	X ¼ =	$88,167.52
March 1, 2018 for 25%			(422.43)
Balance March 1, 2018			$87,745.09

PROBLEM 14-12 (CONTINUED)

(d) (continued)

The reacquisition price: 100,000 shares X $31 = $3,100,000.

The loss on extinguishment of the bonds is:

Reacquisition price	$3,100,000.00
Less: carrying amount of bonds	2,912,254.91
Loss	$ 187,745.09

The entry to record extinguishment of the bonds is:

Bonds Payable.....	2,912,254.91	
Loss on Redemption of Bonds	187,745.09	
Common Shares.....		3,100,000.00

PROBLEM 14-13

1. Sanford Co.

Calculate cash proceeds on issuance:

1) Using tables:

Present value of annuity: $25,000 x 5.58238 =	$139,559
Present value of principal: $500,000 x 0.66506 =	332,530
Total	$472,089

2) Using a financial calculator:

PV	$?	Yields $472,088
I	12%/2 = 6%	
N	7	
PMT	$(25,000)	
FV	$(500,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

Schedule of Bond Discount Amortization
Effective-Interest Method
10% Bonds Sold to Yield 12%

Date	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
3/1/17				$472,088
9/1/17	$25,000*	$28,325	$3,325	475,413
3/1/18	25,000	28,525	3,525	478,938
9/1/18	25,000	28,736	3,736	482,674
3/1/19	25,000	28,960	3,960	486,634
9/1/19	25,000	29,198	4,198	490,832
3/1/20	25,000	29,450	4,450	495,282
9/1/20	25,000	29,718**	4,718	500,000

*($500,000 X 10% X 1/2)
**Rounded $1

PROBLEM 14-13 (CONTINUED)

1. Sandord Co. (continued)

3/1/17	Cash	472,088	
	Bonds Payable		472,088
9/1/17	Interest Expense	28,325	
	Bonds Payable		3,325
	Cash		25,000
12/31/17	Interest Expense	19,017	
	Bonds Payable ($3,525 X 4/6)		2,350
	Interest Payable ($25,000 X 4/6)		16,667
3/1/18	Interest Expense	9,508	
	Interest Payable	16,667	
	Bonds Payable ($3,525 X 2/6)		1,175
	Cash		25,000
9/1/18	Interest Expense	28,736	
	Bonds Payable		3,736
	Cash		25,000
12/31/18	Interest Expense	19,307	
	Bonds Payable $3,960 X 4/6)		2,640
	Interest Payable		16,667

PROBLEM 14-13 (CONTINUED)

2. Titania Co.

Calculate cash proceeds on issuance:

1) Using tables:

Present value of annuity: $24,000 x 6.46321=	$155,117
Present value of principal: $400,000 x 0.67684 =	270,736
Total	$425,853

2) Using a financial calculator:

PV	$?	Yields $425,853
I	10%/2 = 5%	
N	8	
PMT	$(24,000)	
FV	$(400,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

PROBLEM 14-13 (CONTINUED)

2. Titania Co. (continued)

Schedule of Bond Premium Amortization
Effective-Interest Method
12% Bonds Sold to Yield 10%

Date	Cash Paid	Interest Expense	Premium Amortized	Carrying Amount of Bonds
6/1/17				$425,853
12/1/17	$24,000	$21,293	$2,707	423,146
6/1/18	24,000	21,157	2,843	420,303
12/1/18	24,000	21,015	2,985	417,318
6/1/19	24,000	20,866	3,134	414,184
12/1/19	24,000	20,709	3,291	410,893
6/1/20	24,000	20,545	3,455	407,438
12/1/20	24,000	20,372	3,628	403,810
6/1/21	24,000	20,190	3,810	400,000

*($400,000 X 12% X 1/2)

6/1/17	Cash	425,853	
	Bonds Payable		425,853
12/1/17	Interest Expense	21,293*	
	Bonds Payable	2,707	
	Cash ($400,000 X .12 X 6/12)		24,000
12/31/17	Interest Expense ($21,157 X 1/6)	3,526	
	Bonds Payable ($2,843 X 1/6)	474	
	Interest Payable ($24,000 X 1/6)		4,000

PROBLEM 14-13 (CONTINUED)

2. Titania Co. (continued)

6/1/18	Interest Expense ($21,157 X 5/6)	17,631	
	Interest Payable	4,000	
	Bonds Payable ($2,843 X 5/6)	2,369	
	Cash		24,000
10/1/18	Interest Expense ($21,015 X .3* X 4/6)	4,203	
	Bonds Payable ($2,985 X .3 X 4/6)	597	
	Cash		4,800
	*$120,000 ÷ $400,000 = .3		
10/1/18	Bonds Payable	120,000	
	Bonds Payable	5,494	
	Gain on Redemption of Bonds		4,294*
	Cash		121,200

*Reacquisition price

$126,000 – ($120,000 X 12% X 4/12)		$121,200
Net carrying amount of bonds redeemed:		
Carrying amount of all bonds June 1, 2018	$420,303	
x 30 % redeemed	126,091	
Less amortization Oct. 1, 2018	597	(125,494)
Gain on redemption		$ (4,294)

12/1/18	Interest Expense ($21,015 X .7*)	14,711	
	Bonds Payable ($2,985 X .7)	2,089	
	Cash ($24,000 X .7)		16,800
	*($400,000 – $120,000) ÷ $400,000 = .7		

PROBLEM 14-13 (CONTINUED)

2. Titania Co. (continued)

12/31/18	Interest Expense ($20,866 X .7 X 1/6)	2,434	
	Bonds Payable ($3,134 X .7 X 1/6)	366	
	Interest Payable ($24,000 X .7 X 1/6)		2,800
6/1/19	Interest Expense ($20,866 X .7 X 5/6) ...	12,172	
	Interest Payable	2,800	
	Bonds Payable ($3,134 X .7 X 5/6)	1,828	
	Cash ($24,000 X .7)		16,800
12/1/19	Interest Expense ($20,709 X .7)	14,496	
	Bonds Payable ($3,291 X .7)	2,304	
	Cash ($24,000 X .7)		16,800

PROBLEM 14-14

(a) The entries for the issuance of the note on January 1, 2017:

The present value of the note is:

1) Using tables:
$1,200,000 X .68058 = $816,700 (Rounded by $4).

2) Using a financial calculator:

PV	$?	Yields $816,700
I	8%	
N	5	
PMT	$ 0	
FV	$ (1,200,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

January 1, 2017

Batonica Limited (Debtor):

Cash	816,700	
Notes Payable		816,700

Northern Savings Bank (Creditor):

Notes Receivable	816,700	
Cash		816,700

PROBLEM 14-14 (CONTINUED)

(b) The amortization schedule for this note is:

SCHEDULE FOR INTEREST AND DISCOUNT AMORTIZATION—
EFFECTIVE INTEREST METHOD
$1,200,000 NOTE ISSUED TO YIELD 8%

Date	Cash Interest	Effective Interest	Discount Amortized	Carrying Amount
1/1/17				$ 816,700
12/31/17	$0	$ 65,336*	$ 65,336	882,036**
12/31/18	0	70,563	70,563	952,599
12/31/19	0	76,208	76,208	1,028,807
12/31/20	0	82,305	82,305	1,111,112
12/31/21	0	88,888	88,888	1,200,000
Total	$0	$383,300	$383,300	

*$816,700 X 8% = $65,336.
**$816,700 + $65,336 = $882,036.

(c) In accordance with IFRS 9.5.5.3, Northern Savings Bank should measure the loss allowance on the receivable for an amount equal to the lifetime expected credit losses if credit risk has significantly increased since initial recognition.

PROBLEM 14-14 (CONTINUED)

(d) The loss is computed as follows:

Carrying amount of loan (12/31/17)	$882,036[a]
Less: Present value of $800,000 due in 4 years at 8%	(588,024)[b]
Loss due to impairment	$294,012

[a]See amortization schedule from answer (b)

1) Using tables:

[b]$800,000 X .73503 = $588,024.

2) Using a financial calculator:

PV	$?	Yields $588,024
I	8%	
N	4	
PMT	$ 0	
FV	$ (800,000)	
Type	0	

3) Using Excel: =PV(rate,nper,pmt,fv,type)

December 31, 2017

Batonica Limited (Debtor):

No entry.

Northern Savings Bank (Creditor):

Bad Debt Expense	294,012	
Allowance for Doubtful Accounts		294,012

Note to Instructor: Since this note is not yet restructured, the loss is treated as an increase in the allowance.

PROBLEM 14-15

(a) The first step is to determine the economic substance of the debt renegotiation and determine if it should be accounted as a settlement or a modification/exchange regarding the old debt. In this case, the creditor is the same and therefore the test to establish whether there is a settlement or not, revolves around the cash flows. The present value of both of the cash flow streams of the new debt are calculated using the historical interest rate of 12% for consistency and comparability.

Pre-restructure carrying amount		$600,000
Present value of restructured cash flows:		
Present value of $600,000 due in 10 years at 12%, interest payable annually; ($600,000 X .32197)	$193,182	
Present value of $30,000 interest payable annually for 10 years at 12% ($30,000 X 5.65022)	169,507	(362,689)
Difference		$237,311

1) Using tables:

Present value of $600,000 due in 10 years at 12%, interest payable annually; $600,000 x .32197 = $193,182

Present value of $30,000 interest payable annually for 10 years at 12%; $30,000 x 5.65022 = $169,507

2) Using a financial calculator:

PV	$?	Yields $362,691
I	12%	
N	10	
PMT	$ (30,000)	
FV	$ (600,000)	
Type	0	

PROBLEM 14-15 (CONTINUED)

3) Using Excel: =PV(rate,nper,pmt,fv,type)

As the present value of the new debt is more than 10% different from the present value of the old debt (using the original rate), this is a substantial change and the transaction is accounted for as a settlement by Perkins and new debt is recorded.

The new debt is recorded at the present value of the new cash flows using the current market rate of interest.

(b)

1. Perkins Inc.

Notes Payable…….	$600,000	
Gain on Restructuring of Debt……		$237,311
Notes Payable…….		$362,689

2. United Bank

Modification Gain or Loss.....	237,311*	
Notes Receivable		237,311

*Calculation of loss.

Pre-restructure carrying amount		$600,000
Present value of restructured cash flows:		
Present value of $600,000 due in 10 years at 12%, interest payable annually; ($600,000 X .32197)	$193,182	
Present value of $30,000 interest payable annually for 10 years at 12% ($30,000 X 5.65022)	169,507	(362,689)
Creditor's loss on restructure		$237,311

PROBLEM 14-15 (CONTINUED)

(c) Losses are now calculated based upon the discounted present value of future cash flows; thus, this fairly approximates the economic loss to the lender.

The debtor recognizes a gain which reflects the fact that they are now paying lower interest. Care should be taken to ensure the reason for the gain is clearly noted in the statements as this is material information and the gain has been generated solely due to the fact that the entity is in financial distress.

PROBLEM 14-16

(a)

On the books of Rocky Mountain Corporation:

Notes Payable	2,000,000	
Common Shares		1,500,000
Gain on Restructuring of Debt		500,000

Fair value of equity	$1,500,000
Carrying amount of debt	2,000,000
Gain on restructuring of debt	$ 500,000

On the books of Abbra Bank:

FV-NI Investments	1,500,000	
Allowance for Doubtful Accounts	500,000	
Notes Receivable		2,000,000

(b)

On the books of Rocky Mountain:

Notes Payable	2,000,000	
Accumulated Depreciation-Buildings	1,400,000	
Buildings		1,900,000
Gain on Disposal of Buildings		1,000,000
Gain on Restructuring of Debt		500,000

Fair value of building	$1,500,000
Carrying amount of building	500,000
Gain on disposal of building	$1,000,000

Note payable (carrying amount)	$2,000,000
Fair value of land	1,500,000
Gain on restructuring of debt	$ 500,000

PROBLEM 14-16 (CONTINUED)

(b) (continued)
On the books of Abbra Bank:

Investment in Property	1,500,000	
Allowance for Doubtful Accounts		
	500,000	
Notes Receivable.....		2,000,000

(c) The first step is to determine the economic substance of the debt renegotiation and determine if it should be accounted as a settlement or a modification/exchange regarding the old debt. In this case, the creditor is the same and so is the currency and therefore the test to establish whether there is a settlement or not revolves around the cash flows. The present value of the cash flow streams of the new debt are calculated using the historical interest rate of 7% for consistency and comparability.

Present value of old debt is $2,000,000.
Present value of new debt is calculated as follows:

Using present value tables:

		7% Factor	Present Value
Single amount	$ 2,000,000	0.816296	$ 1,632,596

PROBLEM 14-16 (CONTINUED)

(c) (continued)

Since the present value of the future cash flows of the new debt differs by an amount larger than 10% of the present value of the future cash flows of the old debt (2,000,000 x 10% = 200,000), the renegotiated debt is considered a settlement and a gain is recorded by Rocky Mountain as calculated below:

The amount of the new debt is recorded at the new cash flows at the current market rate of interest, which is 9%

Using present value tables:
2,000,000 x 0.772183 = $1,544,367 (rounded by $1)

On the books of Rocky Mountain:

Notes Payable.....	2,000,000	
Gain on Restructuring of Debt.....		455,633
Notes Payable		1,544,367

PROBLEM 14-16 (CONTINUED)

(c) (continued)
On the books of Abbra Bank:

Modification Gain or Loss	455,633*	
Notes Receivable		455,633

*Calculation of loss:

Pre-restructure carrying amount	$2,000,000
Less: Present value of restructured cash flows:	
Present value of $2,000,000 due in 3 years at 9% ($2,000,000 X .772183)	1,544,367
Creditor's loss on restructure	$ (455,633)

(d) The first step is to determine the economic substance of the debt renegotiation and determine if it should be accounted as a settlement or a modification/exchange regarding the old debt. In this case, the creditor is the same and so is the currency and therefore the test to establish whether there is a settlement or not revolves around the cash flows. The present value of the cash flow streams of the new debt are calculated using the historical interest rate of 7% for consistency and comparability.

Present value of old debt is $2,000,000.
Present value of new debt is calculated as follows:

Using present value tables:

		7% Factor	Present Value
Single amount	$ 1,700,000	0.816296	$ 1,387,703
Interest payments for third year	68,000	0.816296	55,508
			$ 1,443,211

PROBLEM 14-16 (CONTINUED)

(d) (continued)

Since the present value of the future cash flows of the new debt differs by an amount larger than 10% of the present value of the future cash flows of the old debt (2,000,000 x 10% = 200,000), the renegotiated debt is considered a settlement and a gain is recorded by Rocky Mountain as set out below:

The amount of the new debt is recorded at the new cash flows at the current market rate of interest, which is 9%

Using present value tables:

		9% Factor	Present Value
Single amount	$ 1,700,000	0.77218	$ 1,312,706
Interest payments for third year	68,000	0.77218	52,508
			$ 1,365,214

PROBLEM 14-16 (CONTINUED)

(d) (continued)

Notes Payable	2,000,000	
Gain on Restructuring of Debt		634,786
Notes Payable		1,365,214

On the books of Abbra Bank:

Modification Gain or Loss	634,786*	
Notes Receivable		634,786

*Calculation of loss:

Pre-restructure carrying amount		$2,000,000
Present value of restructured cash flows:		
Present value of $1,700,000 due in 3 years at 9%, ($1,700,000 X .77218)	$1,312,706	
Present value of $68,000 interest payable in third year 9%, ($68,000 X .77218)	52,508	1,365,214
Creditor's loss on restructure		$ (634,786)

PROBLEM 14-17

The first step is to determine the economic substance of the debt renegotiation and determine if it should be accounted as a settlement or a modification/exchange regarding the old debt. In this case, the creditor is the same and so is the currency and therefore the test to establish whether there is a settlement or not revolves around the cash flows. The present value of the cash flow streams of the new debt are calculated using the historical interest rate of 10% for consistency and comparability.

Present value of old debt is $500,000 + accrued interest of $50,000 ($500,000 x 10%) for a total of $550,000.

Present value of new debt is calculated as follows:

Using present value tables:

		10% Factor	Present Value
Single amount, 5 years	$ 300,000	0.62092	$ 186,276
Interest annuity, 5 years ($300,000 X 10%)	30,000	3.79079	113,724
			300,000
Shares given 20,000 X $5			100,000
			$ 400,000

PROBLEM 14-17 (CONTINUED)

Since the difference between the present value of the future cash flows of the new debt and the present value of the future cash flows of the old debt differs by an amount larger than 10% of the present value of the future cash flows of the old debt (10% x $550,000 = $55,000) the renegotiated debt is considered a settlement and a gain is recorded by Gaming as follows:

2017			
Entries by Gaming Inc.:			
Interest Payable		50,000	
Notes Payable		500,000	
Notes Payable			278,372
Common Shares			100,000
Gain on Restructuring of Debt			171,628

The note payable now has a balance of $278,372, which equals the present value of the future cash flows to be paid.

Using present value tables:

		12% Factor	Present Value
Single amount, 5 years	$ 300,000	0.56743	$ 170,229
Interest annuity, 5 years ($300,000 X 10%)	30,000	3.60478	108,143
			278,372

PROBLEM 14-17 (CONTINUED)

Date	10% Cash Interest	12% Effective Interest	Increase in Carrying Amount	Carrying Amount of Note
12/31/17				$ 278,372
12/31/18	$30,000[a]	$ 33,405	$ 3,405[c]	281,777
12/31/19	30,000	33,813	3,813	285,590
12/31/20	30,000	34,271	4,271	289,861
12/31/21	30,000	34,783	4,783	294,644
12/31/22	30,000	35,356*	5,356	300,000

[a]$30,000 = $300,000 x 0.10
[b]$33,405 = $278,372 X 12%
[c]$3,405 = $33,405 – $30,000
*Adjusted due to rounding.

Dec. 31, 2018:		
Interest Expense	33,405	
Notes Payable.....		3,405
Cash		30,000
Dec. 31, 2019:		
Interest Expense	33,813	
Notes Payable.....		3,813
Cash		30,000
Dec. 31, 2020		
Interest Expense	34,271	
Notes Payable.....		4,271
Cash		30,000
Dec. 31, 2021		
Interest Expense	34,783	
Notes Payable.....		4,783
Cash		30,000

PROBLEM 14-17 (CONTINUED)

Dec. 31, 2022		
Interest Expense	35,356	
Notes Payable		5,356
Cash		30,000
Notes Payable	300,000	
Cash		300,000

PROBLEM 14-18

(a) September 30, 2017

Thornton:

Interest Receivable ($300,000 X .12 X 9/12)	27,000	
Interest Income		27,000
Loss on Investments	47,000	
Cash	280,000	
Interest Receivable		27,000
Notes Receivable		300,000

This would not be a troubled debt restructuring.

Shutdown: No entry. Shutdown does not have a troubled debt restructuring.

Orsini:

Interest Income*	27,000	
Notes Receivable	253,000	
Cash		280,000

*A debit to Interest Receivable is also appropriate. This would not be a troubled debt restructuring.

PROBLEM 14-18 (CONTINUED)

(b) December 31, 2017

Shutdown:

Interest Expense ($300,000 X .12)	36,000	
Interest Payable		36,000
Notes Payable	300,000	
Interest Payable	36,000	
Cost of Goods Sold	240,000	
Inventory		240,000
Gain on Restructuring of Debt		21,000
Sales Revenue		315,000

This would be a troubled debt restructuring for Shutdown, since the settlement, $315,000, is less than the carrying amount of the debt, $336,000.

Orsini:

Interest Receivable ($300,000 X .12)	36,000*	
Interest Income		36,000

*Only net of $9,000 reported as interest income because $27,000 of accrued interest was purchased in September.

Inventory	315,000	
Notes Receivable		253,000
Interest Receivable		36,000
Gain on Investments		26,000

This would not be a troubled debt restructuring.

(Note to instructor: This problem indicates that symmetry may not always be achieved between the debtor and creditor and that the debtor may have a restructuring but the creditor, if changed, may not.)

PROBLEM 14-19

(a) The first step is to determine the economic substance of the debt renegotiation and determine if it should be accounted as a settlement or a modification/exchange regarding the old debt. In this case, the creditor is the same and so is the currency and therefore the test to establish whether there is a settlement or not revolves around the cash flows. The present value of the cash flow streams of the new debt are calculated using the historical interest rate of 10% for consistency and comparability.

Present value of old debt is $110,000 + $11,000 = $121,000.
Present value of new debt is calculated as follows:

1) Using tables:

		10% Factor	Present Value
Single amount, 3 years	$ 100,000	0.75132	$ 75,132
Interest annuity, 3 years	10,000	2.48685	24,868
			$100,000

2) Using a financial calculator:

PV	$?	Yields $100,000
I	10%	
N	3	
PMT	$ (10,000)	
FV	$ (100,000)	
Type	0	

PROBLEM 14-19 (CONTINUED)

3) Using Excel: =PV(rate,nper,pmt,fv,type)

Since the present value of the future cash flows of the new debt differs by an amount larger than 10% of the present value of the future cash flows of the old debt in the amount of $121,000 the renegotiated debt is considered a settlement. The old debt would be removed from the books, the new debt recognized and the difference would be recorded as a gain for Mazza.

The effective interest rate subsequent to restructure is the current market rate of interest.

(b)

Mazza Corp.
SCHEDULE OF DEBT REDUCTION AND
INTEREST EXPENSE AMORTIZATION

Date	Cash Interest	Effective Interest (Market)	Change in Carrying Amortized	Carrying Amount
12/31/17				$100,000
12/31/18	$10,000[a]	$10,000[b]	$ 0	100,000
12/31/19	10,000	10,000	0	100,000
12/31/20	10,000	10,000	0	100,000
12/31/20	100,000		100,000	-0-

[a] $10,000 = $100,000 X 10%.
[b] $10,000 = $100,000 X 10%.

PROBLEM 14-19 (CONTINUED)

(c)
Calculation of loss:

Pre-restructure carrying amount	$121,000
Present value of restructured cash flows:	100,000
Tsang Corp.'s loss on restructure	$ (21,000)

Tsang Corp.

Date	Cash Interest	Effective Interest (Market)	Change in Carrying Amortized	Carrying Amount of Note
12/31/17				$100,000
12/31/18	$ 10,000[a]	$10,000[b]	$ 0	100,000
12/31/19	10,000	10,000	0	100,000
12/31/20	10,000	10,000	0	100,000
12/31/20	100,000	0	100,000	0

[a] $10,000 = $100,000 X 10%. [b] $10,000 = $100,000 X 10%.

(d) Mazza Corp. entries:

December 31, 2017

Interest Payable	11,000	
Notes Payable	110,000	
Notes Payable		100,000
Gain on Restructuring of Debt		21,000

December 31, 2018, 2019

Interest Expense	10,000	
Cash		10,000

PROBLEM 14-19 (CONTINUED)

(e) Tsang Corp. entries:

December 31, 2017		
Modification Gain or Loss	21,000	
Notes Receivable		21,000
Note that the dr. could be booked to the Allowance account instead if the loss had already been provided for.		
December 31, 2018, 2019		
Cash	10,000	
Interest Income		10,000

PROBLEM 14-20

(a) Legal defeasance requires that the creditor agrees to collect principal and interest payments from the trust rather than from LL. A legal agreement on behalf of the creditor, the trust, and the debtor would be needed to achieve legal defeasance. Under IFRS, LL would be able to derecognize the liability if they obtain legal defeasance and extinguish the debt. In substance defeasance results when a company sets up a trust to repay the principal and interest payments for the debt without obtaining the creditors agreement. Without obtaining a legal agreement from the creditor, the primary obligation to repay the loan resides with LL. As a result, in substance defeasance does not result in derecognition of the liability according to IFRS.

(b) For both legal and in substance defeasance there is an argument for derecognition of debt on the financial statements since LL has set up a trust with low risk investments that will be able to cover all future interest and principal payments. Effectively, by setting up the trust LL has prepaid the debt with low risk of default based on their investment strategy.

(c) Regardless of the intent of the company, IFRS looks at whether there is a legal obligation.. Therefore, if the agreement from the creditor has not been obtained, in substance defeasance occurs and the debt must remain on the statement of financial position. In order to extinguish the debt, LL needs to obtain a legal agreement from the creditor releasing them from the debt obligation and transferring that obligation to the trust. The ethical accountant must communicate this to the VP Finance and explain that, without a formal agreement with the creditor, the debt cannot be extinguished on the LL financial statements.

CASE

Note: See the Case Primer on the Student website, as well as the Summary of the Case Primer in the front of the text. Note that the first few chapters in volume 1 lay the foundation for financial reporting decision making.

CA 14-1 Kitchener Mechanical Incorporated

Overview

- Company is a manufacturer and is looked to expand its facility. The Company has had cash flow issues, and there are substantial amounts outstanding from a major customer.
- Company has a debt to equity covenant with Nexis Bank that it is close to breaching.
- Company looking into alternative methods of financing the expansion where it will not impose more cash flow difficulties.
- Magmum Corp will be a user to assess the financial position of the Company to ensure that the lease payments can be made
- Nexis Bank is also a user and will use statements to predict cash flows to ensure debts are repaid. The bank will also use the statements to assess whether the covenant is met.
- President is concerned about adding additional debt to the statement of financial position, specifically in terms of debt to equity ratio.
- GAAP a constraint since Magmum would likely want to assess Kitchener's ability to pay as would the bank—GAAP would provide more useful information. The controller would like to know where any differences exist between IFRS and ASPE.

CA 14-1 Kitchener Mechanical Incorporated (CONTINUED)

Analysis and recommendations

Issue: How to account for the project financing arrangement

Lease	Project financing arrangement
- First would need to assess whether the commitment is a capital or operating lease obligation under ASPE. It would appear that it is an operating lease since the purchase at the end of the contract is at 1.2 x market, which does not constitute a bargain purchase option and the lease term is short compared to the likely life of the facility. The amount of lease payments is not given in the case but this would need to be determined to see how if compared to the fair value of the facility. - If this is an operating lease, it is considered an executory contract, and no amount would be recorded on the balance sheet. - Would not record any amount since the lease payments become payable as each month passes. - Either way, should note disclose the commitment to pay lease payments and the payment at the end of the term. -	- Is this really a project financing? - Magmum is simply providing construction services for the building—which is really Kitchener's building. This is the economic substance of the arrangement. - These services are being paid for over time (debt service component of the lease payments) instead of upfront. - Since the plant ownership reverts to Kitchener at the end and is on their land, it could be considered their asset. However, given that Kitchener needs to pay 1.2 x market value at the end of the term, until that time, the asset does not belong to Kitchener. - Regardless of the above, Kitchener has an obligation to pay the lease payments which are comprised of a flat fee plus a percentage of the revenue earned. - Recognition of an obligation would worsen the debt to equity ratio. -

CA 14-1 Kitchener Mechanical Incorporated (CONTINUED)

Lease	Project financing arrangement
- The building—even though on Kitchener's property – is owned by Magmum for the first 20 years—Kitchener does not have control over it. - Does not affect debt on the statement of financial position if treated as operating lease. Under IFRS 16 (in effect 2019), if the contract met the definition of a lease, the company would have to estimate and recognize a liability for any amounts that were probable as well as a contractual right to use the facility. This would impact the debt to equity ratio (likely worsening it).	

If the lease is classified as an operating lease under ASPE, it would only be recognized as an expense over the lease term. GAAP would be similar under IFRS and ASPE unless the new IFRS 16 were followed in which case a lease liability and contractual right to use the facility would be recorded. Since the company is planning to go public, likely they should apply IFRS 16 and recognize the arrangement as a lease.

INTEGRATED CASES

IC 14-1 Big Bath Emporium (BBE)

Overview

- Bank would like audited statements and debt covenant requires a debt/equity ratio of no more than 1.1/1. Therefore, the statements must follow GAAP (may use ASPE or IFRS) and debt and equity are sensitive numbers – may be a bias to ensure that the debt covenant is not broken since they need the bank loan in order to finance their expansion to Quebec. Bob will use the statements to assess financial position and performance.
- Formerly income tax minimization may have been the objective, since BBE is a private company. As such, BBE was not legally bound by GAAP. However, an audit is now required and there will be a bias to ensure that the debt covenants are met.
- As auditors, we must ensure that the statements are transparent. Differences between IFRS and ASPE will be noted.

Analysis and recommendations - MEMO

To: ***Manager, Brayden LLP***
From: ***Senior Accountant, Brayden LLP***
Re: ***Accounting issues noted for Big Bath Emporium***

Introduction

The following report has been prepared to analyze the current policies in place and the transactions that took place during the year, in order to determine the issues that will be encountered during the audit. BBE may choose IFRS or ASPE. We will apply ASPE given that there is no need to use IFRS since no indication of an intention to go public.

IC 14-1 BBE (CONTINUED)

Warranty Expense

Issue Analysis: The cash method of accounting for warranty costs is acceptable when the costs are not material or when the warranty period is relatively short. It may also be acceptable when the amount of the liability cannot be reasonably estimated or if future costs are not likely to be incurred. However, the current warranty expense is material and can be estimated, therefore, the cash method is not acceptable.

Given that the warranty is sold as a separate product, the revenue from the warranty should be recognized (unearned revenues). The company has sold 100 warranties at $5000 each, for total revenue of $500,000. However, given that the performance on the warranty takes place over five years, the revenue should be recognized over time. Given that the warranty costs are incurred relatively evenly over five years, the revenue should also be recognized evenly over five years, $100,000 per year.

The estimated costs of the warranty are $500 per year for 5 years. Since BBE is recording warranty on a cash basis, we would need to adjust (no warrant costs were incurred this year but should accrue one year's worth of costs in order to match with the revenues recognized = $500 X 100 warranties X 1 year = $50,000)

Since the company previously recognized revenue on the cash basis, need to reverse the revenue amount pertaining to future years' service and recognize as unearned revenues ($400,000).

Implication on D/E. This increases liabilities by $400,000 in deferred revenue. In addition, increases liabilities by $50,000 for the warranty liability. Since BBE uses the cash basis to record the warranty and revenue, the revenue will decrease by $400,000 and expenses wil increase by $50,000, for overall net impact on income of $450,000, decreasing retained earnings and equity.

IC 14-1 BBE (CONTINUED)

Decommissioning costs

Issue Analysis: The loss should be accrued since the costs meet the definition of a liability: result of a past transaction (since the facility has already been built), probable outflow of resources (government required, thus, probable), and costs are measurable (management is able to estimate the costs). Given that the amount is due in ten years, the cost needs to be discounted. We can use the recent borrowing rate from the bank at 9% for discounting. Using present value tables: $500,000 x 0.42241 = $211,205. Since the amount is a decommissioning cost, the $211,205 increases the cost of the asset, and is also recorded as a liability.

Buildings	211,205	
Asset Retirement Obligation		211,205

Each year, the liability will be increased, the increase recorded as an interest expense. The asset will be depreciated with the increased amount.

Each year, the company would recognize the increase in ARO due to accretion as follows:

Year	Balance	Accretion (9%)
0	$211,205	$19,008
1	$211,205 + 19,008 = 230,213	$20,719
2	$230,213 + 20,719 = 250,932	$22,584
3	$250,932 + 22,584 = 273,516	$24,616
4	$273,516 + 24,616 = 298,132	$26,832
5	$298,132 + 26,832 = 324,963	$29,247
6	$324,963 + 29,247 = 354,210	$31,879
7	$354,210 + 31,879 = 386,089	$34,747
8	$386,089 + 34,747 = 420,837	$37,875
9	$420,837 + 37,875 = 458,712	$41,284
10	$458,712 + 41,284 = 500,000	$0

Impact on D/E: This negatively impacts the ratio as debt will increase by $211,205, but, it is required for GAAP compliance.

IC 14-1 BBE (CONTINUED)

Interest Free Loan

Issue Analysis: Long-term debt is recorded at the present value (fair value) of the stream of payments. Currently, BBE recorded the liability at the face value of $200,000, however, this represents the undiscounted amount, and therefore, both assets and liabilities are overstated. The present value of the payments, is calculated using the 9% interest rate on the current bank loan over two years. Present value using tables: $200,000 x 0.84168 = $168,336. Thus, the inventory and the liability should be recorded at $168,336. However, since the net realizable value of the inventory is only $100,000, and the inventory must be recorded at the lower of cost and net realizable value, the inventory needs to be written down again to $100,000, representing a loss of $68,336. The adjusting entries would be:

Liability	31,664	
Inventory		31,664
Loss on Inventory	68,336	
Inventory		68,336
Interest Expense	15,150	
Liability		15,150

Impact on D/E at year end: Liabililties decrease by $16,514, which reflects positively on the the debt to equity ratio, but income decreases by $83,486 due to the write down and interest expense, which decreases retained earnings and decreases equity.

IC 14-1 BBE (CONTINUED)

Contingent liability

Issue Analysis: The liability should be recognized because the criteria of likely and measurable are met. The liability is likely given that the lawyers predict a settlement. The liability is also measurable because the lawyers anticipate a settlement between $100,000 and $120,000. Under ASPE, the contingent liability should be recorded at the lower end of the range, $100,000. Under IFRS, this would need to be recognized at the mid point of the range, $110,000. Although Thomas believes that there will be no outflow, the lawyers anticipate a settlement, and thus, the adjusting journal entry is as follows:

Litigation Expense	100,000	
Contingent Liability.....		100,000

Impact on D/E: The ratio is negatively impacted by the $100,000 expense, decreasing retained earnings and equity, and increasing liabilities by $100,000.

Redeemable and Retractable Shares

Issue Analysis: BBE issued 10,000 redeemable and retractable preferred shares at $50 each. BBE has classified the shares as equity, however, ASPE/IFRS requires the substance of the instruments to be assessed, as opposed to the legal form.

IC 14-1 BBE (CONTINUED)

Elements of Equity

- Dividends are to be declared on a discretionary period after the expiry of the retraction period
- Dividends after the retraction period are not cumulative.

Elements of Debt

- Mandatory dividend payment of $10 per share requires the delivery of cash for the first five years.
- The shares are retractable at the discretion of the holder, therefore, requiring BBE to deliver cash. The likelihood of the holders retracting the shares is high given that after 5 years, the retraction period expires and dividends are no longer mandatory or cumulative.

Based on the substance of the transaction, ASPE/IFRS provides guidance on when preferred shares establish a contractual obligation to deliver cash indirectly through the terms and conditions, such as these preferred shares. These shares should be classified as a financial liability. ASPE has an exemption for redeemable and retractable shares issued in a tax planning arrangement. Under the exemption the shares may be recognized as equity, and the dividends accounted for as ordinary dividends through retained earnings. As such, under ASPE, no revision would be needed. However, under IFRS, the shares would need to be reclassified as a liability, and the dividend of $100,000 that went through the retained earnings should go through the income statement as interest expense.

Impact on D/E: Under ASPE, there would be no change. Under IFRS, the debt is understated by the $500,000 and the income is overstated by $100,000 dividend.

Payment of Dividend on Common Shares

Issue Analysis: Prior to paying the dividend, Bob should look at the revised covenant to determine if it is met after all the adjustments.

IC 14-1 BBE (CONTINUED)

Summary: I have prepared Exhibit I to summarize the GAAP adjustments and the impact on the D/E ratio. After making all of the GAAP adjustments, the debt-to-equity ratio will be 1.16:1, definitely in violation of compliance with the covenants. Once the dividend is paid, equity will decrease by $800,000, and the ratio will increase to 2.11:1.

Exhibit 1 - Recalculation of D/E Ratio

	Debt	**Equity**
Preliminary	1,300,000	2,400,000
Debt-to-equity ratio	0.54	:1
GAAP Adjustments		
1) Warranty expense	450,000	(450,000)
2) Decommissioning costs	211,205	0
3) Interest free loan	(16,514)	(83,486)
4) Contingent liability	100,000	(100,000)
5) Redeemable shares	0	0
Pre-dividend balances	2,044,691	1,766,514
Debt-to-equity ratio	1.16	:1
Dividend		(800,000)
Adjusted balance	2,044,691	966,664
Adjusted D/E ratio	2.11	: 1

It is recommended that Bob does not pay the dividend, and that the Company seeks an alternative to avoid the covenant violation and classification of the long-term debt as current. Additional equity is required. Alternatively, the company should renegotiate the covenant with the bank, since, even without the dividend, the covenant is still breached.

IC 14-2 RTL

Overview:

- RTL is a private family run business so ASPE is an option. There are no future plans of going public so IFRS is not required.
- The bank will use the financial statements to assess going concern and RTL's ability to pay interest and principal.
- Management will use the financial statements to assess RTL's transition to digital printing and achievement of revenue targets.
- The auditors will be auditing the financial statements with a transparent reporting objective.
- There is a potential for management bias and aggressive accounting policies.
    - RTL's profits have been declining for the past 2 years and it has recently lost 50% of its revenue.
    - RTL also entered into an agreement with the bank for a restructuring of its loan.
- Our reporting objective as the controller is to fairly present the statements.

Issue: Recognition of the restructuring of debt.

A modification of debt can be treated as a settlement if the following condition is met.

If the discounted PV under the new terms (discounted at the original effective rate) is at least 10% different from the discounted PV of the remaining cash flows under the old debt – the old debt is treated as a settlement and removed from the books.

Old debt: $2,000,000 (debt is due end of 2017)
New debt: $1,500,000 (0.75132) + $120,000 (2.48685) = $1,425,402

IC 14-2 RTL (CONTINUED)

10% of the value of the old debt is $200,000. The difference between the old and new debt is greater than $200,000. Therefore, this restructuring qualifies as a settlement of the old debt.

The discount rates are calculated using the following:
Discount rate of 0.75132 is the PV discount factor for a single sum (10%, 3 years)
Discount rate of 2.48685 is the PV discount factor for an ordinary annuity (10%, 3 years)

Using a financial calculator:

PV	$?	Yields $1,425,394
I	10%	
N	3	
PMT	$ (120,000)	
FV	$ (1,500,000)	
Type	0	

Excel formula =PV(rate,nper,pmt,fv,type)

On the books, the new debt is calculated using the current market discount rates using the following:

Discount rate of 0.77218 is the PV discount factor for a single sum (9%, 3 years)
Discount rate of 2.53130 is the PV discount factor for an ordinary annuity (9%, 3 years)
Resulting present value is $1,426,026

Using a financial calculator:

PV	$?	Yields $1,462,031
I	9%	
N	3	
PMT	$ (120,000)	
FV	$ (1,500,000)	
Type	0	

Excel formula =PV(rate,nper,pmt,fv,type)

IC 14-2 RTL (CONTINUED)

The following journal entry is required (using the PV tables):

Debt (old)	2,000,000	
Debt (new).....		1,462,026
Gain on Restructuring of Debt		537,974

Issue: Revenue recognition of the digital contract sales.

Immediate recognition	Defer recognition
- Nonrefundable fee – no additional service is required to be performed by RTL. The upfront fee is paid upfront ensuring collectability and measurability. - Minimum contract fee – RTL earns a minimal contract fee at the end of the contract term (2-3 years) even if no printing services are performed. - Customers pay a per-unit fee for each digital print and this would be recognized as earned (covering costs). - Another option is to recognize the nonrefundable fee and the minimal contract fee over the duration of the contract.	- Nonrefundable fee – the earnings process for the sales transaction is the entire duration of the contract. RTL must be available to perform printing services on-demand – the earnings process is not completed upon signing of the contract. - Minimal contract fee – same as above. - Risk still remains with RTL for the duration of the contract – for the on-demand printing services. - Collectability – may be an issue – 2 of RTL's digital customers have gone bankrupt. RTL does not have any history with digital customers – an appropriate estimate for an allowance for doubtful accounts may not be possible.

Conclusion: Depending on the significance of 2 digital customers that have filed for bankruptcy and RTL's limited digital sales history - collectability may be a concern and RTL should recognize the nonrefundable fee and minimal contract fee at the end of the

contract. Assuming collectability – may recognize overtime as earned.

IC 14-2 RTL (CONTINUED)

Minor Issue: Recognition of an asset retirement obligation.

The $100,000 represents a constructive obligation. RTL is planning to sell the equipment to a vendor who will only purchase the digital printing equipment if RTL makes the necessary modifications to update the equipment and prepare it for sale.

The liability should have been recorded at PV (using the discount rate in effect at that time), not at $00,000. The printing equipment asset should have increased by the PV of the obligation. Accretion expense should have been recorded for 2016 and 2017. As the accounting ledger for 2016 is now closed the correction must be recorded in the 2017 ledger. An adjustment to opening equity will be required. For 2017 the appropriate accretion expense must be recorded in the operating statement.

RESEARCH AND ANALYSIS

RA 14-1 BROOKFIELD ASSET MANAGEMENT INC.

(a)

Debt to total assets ratio = (Total debt) / (Total assets)
Times interest earned = (Income before income taxes & interest expense) / (Interest expense)

December 31, 2013:

Debt to total assets ratio = $65,219 / $112,745 = 57.8%
Times interest earned = $7,242[1] / $2,553 = 2.84

December 31, 2014:

Debt to total assets ratio = $76,233 / $129,480 = 58.9%
Times interest earned = $9,111[2] / $2,579 = 3.53

During 2014, BAM's solvency deteriorated slightly as its ratio of debt to total assets increased, indicating that the company's creditors financed an increased proportion of its investment in assets. However, its times interest earned also increased during 2014 indicating a modest improvement in BAM's ability to cover the interest charges associated with its debt. The increase in the coverage ratio is important, especially if interest rates increase in the economy at the same time as an increase in the debt ratio. It should be noted that BAM's business requires heavy investment in stable long-term assets, so the debt ratio is likely not out-of-line in its industry. Note 26 indicates that the company is in compliance with all covenants associated with its debt. The company appears to be in a satisfactory condition relative to its solvency and financial flexibility.

[1] $3,844 + $845 + $2,553
[2] $5,209 + $1,323 + $2,579

RA 14-1 BROOKFIELD (CONTINUED)

(b) BAM has borrowed long-term through the following types of interest-bearing debt: long-term notes payable, commercial paper, bank loans, and mortgages. Details are not provided about the make-up of the subsidiary borrowings.

Due dates of debt reported, December 31, 2014:

	Corporate borrowings	Property-specific mortgages	Subsidiary borrowings
Current (2015) & commercial paper and bank borrowings	$ -0- 574	$ 3,820	$ 962 Not available
2 to 5 years (2016 to 2019)	1,232	19,354	5,401
6 to 10 years (2020 to 2024)	1,251		
After 10 years (2025 on)	1,042	17,190	1,966
Deferred financing costs	(24)	-0-	-0-
	$ 4,075	$40,364	$ 8,329

Note 18 (Corporate Borrowings) gives no indication of security by anything other than the reputation of the company. However, Note 6 (Financial Assets) and Note 8 (Inventory) indicate that $2,014 million of financial assets and $2,284 million of inventory, respectively, are pledged as collateral/security. This is likely for any bank borrowings and notes payable. In addition, all the property-specific mortgages (non-recourse borrowings) are secured by the underlying property the funds were borrowed for, as indicated in Note 19.

The subsidiary borrowings (under non-recourse borrowings) are not described as secured, but it is likely they are also secured by a mix of current and financial assets as well as underlying property held by the subsidiaries.

RA 14-1 BROOKFIELD (CONTINUED)

(c)

Currency	Corporate Borrowings	Property Specific Mortgages	Subsidiary Borrowings
US$	$ 489	$ 25,193	$ 5,429
Canadian $	3,036	4,839	2,596
US and Canadian $	574		
Deferred finance costs	(24)		
Australian $		3,865	163
British £ (pounds)		2,208	27
Brazilian reais		2,123	114
Chilean unidad de fomento		898	
European Union € (euros)		877	
Indian rupees		193	
Columbian pesos		168	
Total	$ 4,075	$ 40,364	$ 8,329

Note 2(e) - Foreign Currency Translation indicates that the “U.S. dollar is the functional and presentation currency of the company.” This means that all amounts presented on the December 31, 2014 balance sheet, including the corporate borrowings, property-specific mortgages, and the subsidiary borrowings are reported at or are restated into their U.S. dollar equivalent at this reporting date.

(d) The subsidiary borrowings are included in BAM’s liabilities because BAM presents consolidated financial statements. As indicated in Note 2(d), such statements include the accounts (which means all the assets and liabilities) of the company and entities that BAM exercises control over – its subsidiaries. It is BAM’s ability to control the “relevant activities, exposure or rights to variable returns from involvement with the investee, and the ability to use its power over the investee to affect the amount of its returns” that is the reason to include all the controlled companies’ assets, liabilities, revenues and expenses in with BAM’s own corporate items. In this way, BAM’s existing and potential shareholders can more fully appreciate the company’s financial position and financial performance.

RA 14-2 LOBLAW COMPANIES LIMITED AND EMPIRE COMPANY LIMITED

(a) The following are the debt-to-total asset and times interest earned ratios for the companies:

millions	Loblaw January 3, 2015	Empire May 2, 2015
Total liabilities	$20,897	$5,436.5
Total assets	33,684	11,473.4
Debt to asset ratio	0.62	0.47
Earnings before interest and taxes	662	743.6
Interest expense*	584	156.3
Times interest earned	1.13	4.76

* Due to the difficulty in separating out the appropriate net direct interest cost associated with each company's total liabilities, the net finance charges used on the statement of income of each company were used.

From the above analysis, it appears that Loblaw has more relatively more debt than Empire in its capital structure. This results in its times interest earned ratio also being lower than Empire's. However, these results need to be further investigated. For example, Empire has significant operating leases that need to be considered in preparing a full analysis. In this case, the use of operating leases and the resulting accounting for them means that many of Empire's assets and obligations are "off-balance sheet" and not captured on the statement of financial position. (See discussion below in part (c).) In addition, Loblaw's acquisition, and consolidation of the accounts of Shoppers Drug Mart during the fiscal year ending January 3, 2015 has affected many of their ratios, and this was not "business as usual."

(b) The following key financial condition ratios are highlighted in either or both of each company's Management Discussion and Analysis and its note to the financial statements on Capital Management, with all terms defined in the discussion:

	Loblaw (Note 25)	Empire (Note 30)
Funded debt to total capital ratio		27.7%
Net funded debt to net capital ratio		25.1%
Funded debt to EBITDA		1.9X
EBITDA to interest expense		8.9X
Adjusted debt to adjusted EBITDA	3.1:1	
Net debt to equity	0.8:1	

RA 14-2 LOBLAW AND EMPIRE (CONTINUED)

(b) (continued)

As can be seen from the above table, the companies use different ratios to monitor and present their debt financial condition, and the ratios are calculated differently. Since these are non-GAAP measures, there is detail provided as to how these ratios have been calculated in the "Non-GAAP Financial Measures" section of the MD&A, although Empire provides this information in its Capital Management note as well. Financial analysts may calculate their own ratios so that the two companies could be compared on the same basis.

In addition, because Loblaw's operations include PC Bank, it is subject to regulatory requirements of the Superintendent of Financial Institutions (OSFI), particularly for equity capital ratios.

(c) Reviewing the long term debt (Note 15) of Empire, the company has a relatively small amount of first mortgage loans repayable 2015 to 2033, medium term notes coming due between 2018 to 2040, shorter term sinking fund debentures coming due in 2016, unsecured notes also due in 2016, credit facilities due in 2017, finance lease obligations payable over the 2015 to 2040 period, and miscellaneous other debt. According to Empire's MD&A, the Dominion Bond Rating Service (DBRS) assessed the credit rating of Sobeys (Empire's major food retailer and operating company) as BBB (low) with a stable trend, and Standard and Poors (S&P) rated it at a BBB- rating with a negative trend.

Loblaw, in note 22, outlines that its debt is primarily made up of notes payables which mature on various dates from 2016 to 2043. It also has borrowings under a term loan facility due in 2019, mortgage secured debt, guaranteed investment certificates (GICs) and independent securitization and funding trust borrowings. In addition, the company has finance lease obligations. In Section 9.3 of Loblaw's MD&A, the company reports that both DBRS and S&P assigned the company a credit rating of BBB with a stable trend.

The primary reason behind the lower rating for Empire is not initially obvious as the most recent capital ratios in part (a) were better for Empire than for Loblaw. It could be due to the extent of Empire's off-balance sheet operating lease obligations: a gross lease obligation of $1,385.7 + $1,492.2 = $2,877.9 million, more than its total of on-balance sheet long-term debt of $2,295.9. Loblaw, on the other hand, reports only $5,573 million gross lease obligations, less than half its reported long-term debt. Credit analysts would consider all obligations both on and off the statement of financial position in order to assess financial risk.

RA 14-2 LOBLAW AND EMPIRE (CONTINUED)

(c) (continued)

It should also be noted that the BBB (low) and BBB- rating with a negative trend are both for Sobeys, not for Empire, and it is the Sobeys subsidiary that has the operating leases on its store sites.

One additional factor that should be considered is the Loblaw acquisition of Shoppers Drug Mart during the 2014 fiscal year. This had the effect of increasing the debt on Loblaw's financial statements, but also increasing the potential for future operating cash flows to repay the debt taken on, as well as reducing operating expenses. Financial analysts would consider all these future factors.

(d) Note 30 provides Empire's capital management disclosures. The company's objectives in managing its capital are: to ensure ongoing liquidity, to minimize its cost of capital, to maintain an optimal capital structure to ensure financial flexibility and that financial covenants are met, and to maintain an investment grade credit rating. The company defines "capital under management" as including all interest-bearing debt (funded debt) net of cash and cash equivalents, plus shareholders' equity net of non-controlling interests. The total capital measure at May 2, 2015 was $7,983.8 million. The key ratios monitored are: funded debt to total capital; funded debt to EBITDA and EBITDA to interest expense. Empire had three financial covenants to maintain for which they were in compliance: (1) adjusted total debt to EBITDA, (2) lease adjusted debt to EBITDAR (note: the "R" refers to rent) and (3) debt service coverage ratio: EBITDA to the total of interest expense and repayments of long-term debt over the previous 52 weeks.

In Note 25, Loblaw outlines its capital disclosures. It has five objectives in managing its capital: to ensure sufficient liquidity to pay its obligations and to carry out its operating and strategic plans; to reduce the debt taken on with the Shoppers Drug Mart acquisition in order to return the company's credit rating to investment grade; to maintain financial capacity and the ability to access capital as needs arise; to minimize its cost of capital; and to use short term funding to manage working capital needs and long term funding to finance long term capital investments.

Management defines capital as the total of its bank indebtedness, current debt, current and long-term portions of long-term debt, certain other liabilities, capital securities and Loblaw shareholders' equity. At January 3, 2015 capital under management amounted to $25,261 million.

RA 14-2 LOBLAW AND EMPIRE (CONTINUED)

(d) (continued)

Loblaw monitors certain interest coverage and leverage ratios as defined by loan facility agreements. Its major subsidiary, Choice Properties, also has defined debt service and leverage financial ratios it must meet under creditor agreements. Loblaw's regulated PC Bank subsidiary is required to meet a common equity Tier 1 capital ratio of 4.0%, a Tier 1 capital ratio of 5.5%, a total capital ratio of 8% as well as new liquidity adequacy requirements such as a liquidity coverage ratio, and by January 1, 2018, a net stable funding ratio standard. Loblaw does not provide the results of its ratios except to state that it has been in compliance with all requirements throughout the year.

(e) Empire explains clearly in Note 3 that structured entities are entities controlled by the company through means other than share ownership and voting control. Instead, the company has rights through existing agreements that give it the ability to direct the other entities' activities that significantly affect the returns to Empire. Such entities are fully consolidated with their assets and liabilities being combined with those of Empire and its subsidiaries. While these structured entities are not specifically identified, the company has franchise affiliates where control is attained through franchise agreements, guarantees and standby letters of credit.

Loblaw, in Notes 2, 13 and 18, explains its consolidated structured entities. These include independent franchisees of the company who obtained funding from a structured independent funding trust associated with Loblaw to help with their purchase of inventory and fixed assets. Also, through its banking subsidiary, PC Bank, Loblaw is party to securitization programs that provide funds to operate its credit card operations (Eagle Credit Card Trust). This involves selling some of its interests in credit card receivables to Eagle.

PC Bank continues to service the credit cards and retains the rights to future cash flows after its obligations to Eagle have been met. Loblaw also has set up trusts to acquire company shares that will be needed under its executive compensation restricted share unit (RSU) and its performance share unit (PSU) stock option plans. The company provides the funds to the trust to acquire its shares and it earns a management fee from the trust. All the consolidated structured entities are fully consolidated with their assets and liabilities reported with those of Loblaw itself.

Loblaw also has unconsolidated structured entities. These are made up of securitization trusts managed by major Canadian banks, and which Loblaw

cannot control through share ownership or management and asset agreements.

RA 14-3 DBRS

Note: the solution to this question will necessarily differ in some respects, depending on the industry chosen by the student. What follows is derived from "Rating Companies in the Merchandising Industry."

(a) DBRS explains that there are three steps in assigning a rating to a particular security: first there is a general industry assessment and risk rating assigned; then, through a combination of a more detailed business risk assessment for a specific issuer, and a financial risk assessment and rating, the specific issuer is given a rating; and lastly, a specific instrument rating is determined based on the issuer rating, fine-tuned with detailed input about the conditions associated with the specific security.

In summary, the financial risk assessment is one part of a two-step process to convert the risk rating for a particular industry into one for a specific company in that industry.

(b) The following discussion relates to the merchandising industry, defined by DBRS as companies "principally involved in the selling of any number and type of consumer products and services." Restaurant chains, wholesalers and distributors in these consumer segments are also included.

<u>Industry factors</u> considered in assigning a BBB rating to the industry:

- General characteristics include average stability, low barriers to entry (high competition), sensitivity to changing real estate conditions, and minimal regulation
- Some segments of the industry are very sensitive to changing in economic cycles and some are fairly insensitive to economic conditions
- Large volume retailers have a distinct advantage related to purchasing power, distribution efficiencies, and negotiating power and general influence
- Key success factors for long-term success include effective working capital management, growth and adaptability, maximization of inventory turnover, and minimization of price-cutting
- New market accessibility and growth are possible with product and geographic diversification
- Both leasing and ownership of property have decided advantages and disadvantages
- Offering credit cards and other financial services can help operations but come with increased risk

The industry risk rating is determined for the average firm in the industry, and then the specific company whose business risk is being assessed is rated relative to this “average company.”

RA 14-3 DBRS (CONTINUED)

(b) (continued)

Primary general business risk assessment factors of an issuer:

- The nature of the product offering
- The extent to which the company has a brand name
- The company's operational efficiency related to inventory management, sales and pricing issues
- The relative scale of its size, and therefore, influence in the market place
- The extent of its geographic diversification and extent of market saturation
- Location and flexibility of its property, lease attributes
- For all industries: sovereign risk associated with country of operation, and corporate governance related matters
- For some issuers: Product positioning, physical size, location and level of service; discounter vs. high-end retailer characteristics; e-commerce and on-line opportunities
- Consumer changing demands and company adaptability
- Management and labour relationships
- Existence of loyalty programs, credit cards and associated financial businesses
- For restaurants; also consider whether franchise, owner-operated or corporate operated
- For wholesalers and distributors: also consider company's distribution network and logistics management abilities

RA 14-3 DBRS (CONTINUED)

(b) (continued)

General financial risk assessment factors of an issuer:

- A thorough assessment of liquidity in addition to a current and/or quick ratio – such as cash on hand, operating cash inflows, and availability of bank financing, all compared with short and medium uses of liquidity such as operations, capital expenditures, debt repayments, share buy-backs, dividends, etc.
- Medium term profitability, assessed through a variety of measures such as return on capital
- Free cash flow and other metrics to assess a company's capacity to generate cash for debt repayment
- The company's internal financial policies such as targeted leverage, and dividend and other policies that might indicate a preference for owners over creditors
- Whether the company has had any difficulties in raising capital
- Depending on the company, measures that involve its capital structure, pension liabilities, and off balance sheet liabilities such as operating lease obligations where various metrics such as determining the amount of debt, equity, EBITDA and cash flows have to be adjusted for the related effects
- Calculating primary metrics such as cash-flow-to-debt, debt-to-EBITDA, EBITDA-to-interest and debt-to-capital

In assessing these financial risks, DBRS points out that their ratings are based on future expectations for the metrics, and that this is subjective after analysing the historic measures. In addition, a company's ratios tend to move from the averages calculated, particularly in cyclical businesses, but also in others from time to time, so a single simple metric cannot be used on its own. The rating agency also cautions that adjustments may be needed for inter-company comparisons due to the use of different accounting principles; and for consistency of the ratio variables with the financial terms according to DBRS definitions.

RA 14-3 DBRS (CONTINUED)

(c) DBRS defines the following terms used in part (b) above in its publication *DBRS Criteria: Financial Ratio Definitions and Accounting Adjustments – Non-Financial Companies*:

Cash: cash & cash equivalents + short-term investments
Debt, total: short-term debt + long-term debt + hybrid debt portion + capital leases
Debt, net: total debt – cash
EBITDA: revenue – cost of goods sold – selling, general and administrative expenses
Interest expense, gross: all interest expense + debt hybrid interest expense + capitalized interest (excludes any IFRS adjustment)
Interest expense, net: gross interest expense – interest income from cash and short-term investments
Capital, total: total debt + total preferred equity + total common equity + minority interest + capital leases
Capital, adjusted: total capital + capitalized operating leases

Ratio analysis is much closer to an art than to a science. An art requires the significant use of judgement in determining an outcome, whereas a science has a more prescribed outcome. Science is more "fact" and art is more "opinion."

DBRS defines 47 ratios, 54 ratio terms, 7 particular areas where further adjustments might be needed, as well as guidance on off-balance-sheet items that might need to be considered, in order to standardize the input involved in determining ratio values to a reasonable extent. Even with this extent of guidance, judgement is still required in developing the appropriate metrics.

Once having the metrics based on historic numbers, judgement needs to be applied in assessing future results and positions because this is the key in rating companies and preparing inter-company comparisons. Using the ratios also involves taking into account a multitude of variables related to economic conditions and industry outlooks. It is definitely an area that requires significant professional judgement gained from experience.

RA 14-4 AIR CANADA & WESTJET

(a) Debt to equity ratio = (Total debt) / (Total equity)
Times interest earned = (Income before income taxes & interest expense) / (Interest expense)

Air Canada: (in $ million)

Debt to equity ratio = $11,781 / ($1,133) = n/a
Times interest earned = ($105 + $322)/ $322 = 1.33 times

WestJet: (in $ thousands)

Debt to equity ratio = $2,868,931 / $1,777,502 = 161.4%
Times interest earned = ($390,307 + $51,838) / $51,838 = 8.53 times

The ratios indicate that Air Canada is very highly leveraged and very risky, particularly with its negative shareholders' equity. This means that amounts owed to creditors amount to more than the company's total assets! However, its income before taxes and interest this year were sufficient to cover its interest cost, although just barely.

WestJet's debt to equity ratio appears more reasonable with liabilities equal to 161.4% of its shareholders' equity. While still a very high ratio, it is considerably better than Air Canada's. Its operations also appear less risky with income before interest and taxes being a little over 8.5 times its required interest cost. Here there is a far better safety net in case of difficulties.

(b) Air Canada: adjusted debt to equity ratio

Adjusted debt to equity ratio
= $7,407 / ($1,133) = n/a

WestJet: adjusted debt to equity
= $2,557,038 / $1,777,502 = 143.9%

The results of the revised calculations underscore the necessity of always understanding what is included in the terms used in any given ratio. It is reasonable for the companies to zero in on their long-term interest-bearing debt, including the addition of the capitalized amount of operating leases, as being an important part of the capital they manage as both Air Canada and WestJet have done. The leverage ratios used internally for management purposes -- for both companies – appear better than using the general ratio often used.

RA 14-4 AIR CANADA & WESTJET (CONTINUED)

(b) (continued)

Both determined "adjusted debt" using the same approach: they added capitalized operating lease obligations to their long-term debt (including its current portion) and both excluded current liabilities from the definition of debt. However, Air Canada's adjustments were done on a more liberal basis than WestJet's more conservative approach. For example, WestJet calculated the capitalized operating lease obligations using a multiplier of 7.5 times annual lease/rent expense, while Air Canada used a factor of 7.0 times – both companies indicating this was the industry norm.

For the debt to equity measures used internally by the companies, both made adjustments to the shareholders' equity numbers on the statement of financial position. Air Canada, in fact, measures "equity" as the price of its common shares in the market at year end, thus providing a positive number to use in its adjusted debt-to-equity ratio. The internal measure used was $7,407 / ($68 + $3,401) = 213.5%, and the company does not provide any information on what guidelines it aims for and judges acceptable.
WestJet makes only a small adjustment to its reported shareholders' equity by adding back the hedging reserves portion of shareholders' equity. Its internal adjusted debt-to-equity measure, therefore, is $2,557,038 / $1,780,681 = 143.6%. WestJet discloses that it has a guideline for adjusted debt-to-equity of less than 3 (that is, 300%). It is well within this guideline.

(c) Air Canada indicates that it can adjust its capital structure through varying the following decisions:

- Lease versus purchase decisions
- Deferring or cancelling aircraft expenditures by not exercising or by selling options it has for aircraft
- Issuing debt or issuing equity securities
- Repurchasing shares

WestJet indicates that it has choices of the following in order to maintain its capital structure:

- Purchase shares for cancellation
- Issue new shares
- Pay dividends
- Adjust current and projected debt levels

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