

Modeling Readiness Quiz

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Dear Students,

Modeling is a useful course, but it also a rigorous and demanding elective. In the future, the school may decide to offer a basic version of the modeling course. However, as it stands now, the modeling course is not a basic course.

I have prepared three shorts quizzes to help you assess your accounting skills because they are crucial for modeling. You are supposed to grade the quiz yourself based on answers provided at the end of each quiz. **Please do not send me your answers or your score.** Explanations and detailed solutions for the answers will not be provided.

The quiz has three parts as described below.

- Part 1 (15 minutes) is basic and tests your aptitude for accounting and modeling. If you ace this part, you should move to part 2. If you do not ace this part, consider taking another accounting course such as Financial Statement Analysis before taking modeling.
- Part 2 (30 minutes) tests the minimum accounting skills needed for modeling. If you score less than 50%, then you will need to review your core accounting course **before starting modeling**. If you score between 50% and 80%, then you can catch up if you are prepared to put in significant amount of time on figuring out accounting. If you score more than 80%, then you will be OK, but you should still try part 3 of this quiz to assess how much work you may need to put in.
- Part 3 (OPTIONAL, 40 minutes) tests the accounting skills necessary for you to get the nuances of modeling discussed in class and to sail through the course without feeling overwhelmed. If you score less than 50%, you will still be able to do the assignments and the exams, but you will need to spend significant time (>10 hours) during some weeks in the course to get the modeling nuances. If you score above 50%, you will sail through modeling.

See next page for the quiz.

Part 1: Aptitude for accounting and modeling

- (6 points) Cash received from shareholders is profit for the company and is therefore included on the income statement as revenue. *True False*
- (6 points) Principal received from creditors is a profit generated by the company and is therefore included on the income statement as revenue. *True False*
- (8 points) In Year 1, AccrueCo delivers goods to its customers, who promise to pay \$70 in Year 2. AccrueCo has no doubts about collecting cash from customers, and it does collect the cash in Year 2. Fill in the table below with amounts from AccrueCo's perspective.

	Year 1	Year 2
Revenues		
Receipt from customers		

- (8 points) In Year 1, DeferCo receives \$65 in advance from its customers. DeferCo delivers the goods in Year 2. Fill in the table below with amounts from DeferCo's perspective.

	Year 1	Year 2
Revenues		
Receipt from customers		

- (9 points) Assume that there were no deferred revenues and allowance for bad debts. For simplicity, you may assume that all sales are on credit.

Beginning receivables = \$100

Ending receivables = \$145

Sales revenue recognized during the year = \$234

Total cash received from customers during the year = ?

- (10 points) Assume that there were no receivables and allowance for bad debts. For simplicity, you may assume that all sales are against advances.

Beginning balance of deferred revenue = \$110

Ending balance of deferred revenue = \$123

Sales revenue earned and recognized during the year = \$384

Total cash received from customers during the year = ?

- (6 points) Cash paid as a return of capital (to buy back stock for example) is a loss for the company and is therefore included on the income statement as an expense. *True False*
- (6 points) Cash paid as dividends as a distribution of earnings to shareholders is a loss for the company and is therefore included on the income statement as an expense. *True False*

9. (6 points) Principal repaid to creditors is a loss for the company and is therefore included on the income statement as an expense. *True False*
10. (8 points) AccrueCo's employees work in Year 1, but AccrueCo pays them their salary of \$55 for Year 1 in Year 2. Fill in the table below with amounts from AccrueCo's perspective.

	Year 1	Year 2
Expenses		
Payments		

11. (8 points) In Year 1, DeferCo pays \$43 in advance to its advertising agency for advertising to be designed and aired in Year 2. Fill in the table below with amounts from DeferCo's perspective. Do NOT enter negative numbers for expenses or payments.

	Year 1	Year 2
Expenses		
Payments		

12. (9 points) For simplicity, you may assume that all salaries are on credit.
 Beginning salary payable = \$456
 Ending salary payable = \$193
 Salary expense during the year = \$419
 Salaries paid during the year =?
13. (10 points) For simplicity, you may assume that all insurance is paid in advance.
 Beginning prepaid insurance = \$100
 Ending prepaid insurance = \$198
 Insurance expense during the year = \$345
 Insurance payments during the year =?

Answers to Part 1

1. False

2. False

3.

	Year 1	Year 2
Revenues	70	
Receipt from customers		70

4.

	Year 1	Year 2
Revenues		65
Receipt from customers	65	

5. 189

6. 397

7. False

8. False

9. False

10.

	Year 1	Year 2
Expenses	55	
Payments		55

11.

	Year 1	Year 2
Expenses		43
Payments	43	

12. 682

13. 443

Part 2: Minimum accounting skills needed for modeling

1. (40 points: 2 points for each cell) ICo starts its business at the beginning of Day 1. The set of events for each day are listed below:
- Day 1:
 - ♦ ICo receives a cash contribution of \$100 from its shareholders.
 - ♦ ICo pays \$15 as an advance to its suppliers.
 - ♦ ICo receives \$10 in cash as an advance from its customers.
 - Day 2:
 - ♦ ICo gets delivery of inventory costing \$70 from the supplier to whom it had paid in advance on Day 1. It pays \$26 in cash and promises to pay the remaining on Day 3.
 - Day 3:
 - ♦ ICo pays \$29 due to its suppliers.
 - ♦ ICo sells inventory with a cost of \$33 for \$55 to the customer who had paid \$10 in advance on Day 1. The customer pays another \$28 in cash at the time of delivery and promises to pay the remainder on Day 4. Assume zero bad debts.
 - Day 4
 - ♦ ICo receives the \$17 that was due from the customer.
 - ♦ ICo declares and pays a dividend of \$11.

Fill in the table below based on the information provided above. Do your work on separate pieces of paper and write your final answers clearly in the cells assigned below. We need only your final answers, not your computations. **Unclear answers or answers written elsewhere will be ignored. Enclose cash outflows in parentheses.**

	---Day 1---	---Day 2---	---Day 3---	---Day 4---
Revenues				
Expenses				
Operating cash inflows (outflows)				
Investing cash inflows (outflows)				
Financing cash inflows (outflows)				

2. (24 points: 2 points for each cell) ECo starts its business at the beginning of Day 1. The set of events for each day are listed below:

- Day 1:
 - ♦ ECo gets a cash contribution of \$100 from its shareholders.
 - ♦ ECo prepays \$15 to an advertising agency for advertising to be done on Day 2.

- Day 2:
 - ♦ ECo generates revenues of \$49 and receives them in cash immediately.
 - ♦ ECo runs the advertising campaign. The cost of the advertising campaign is \$32. ECo had already prepaid \$15 on Day 1. It pays another \$10 in cash on Day 2 and promises the pay the remainder on Day 3.

- Day 3:
 - ♦ ECo pays the \$7 due to its advertising agency.

Fill in the table below based on the information provided above. Do your work on separate pieces of paper and write your final answers clearly in the cells assigned below. We need only your final answers, not your computations. **Unclear answers or answers written elsewhere will be ignored. Enclose cash outflows in parentheses.**

	-----Day 1-----	-----Day 2-----	-----Day 3-----
Revenues			
Expenses			
Operating cash inflows (outflows)			
Investing cash inflows (outflows)			

3. (12 points, 3 points for each cell) LCo starts its business at the beginning of Day 1. The set of events for each day are listed below:

- Day 1:
 - ♦ LCo borrows \$100 from a bank at the beginning of day 1. The bank charges 20% interest per day on the balance outstanding at the beginning of the day. Any unpaid interest is added to the outstanding balance.
 - ♦ LCo spends \$90 in cash for research.
 - ♦ LCo does not repay anything to its bank.
- Day 2:
 - ♦ LCo generates revenues of \$175 and receives them immediately in cash.
 - ♦ LCo repays the bank in full at the end of Day 2.

Fill in the table below based on the information provided above. Do your work on separate pieces of paper and write your final answers clearly in the cells assigned below. We need only your final answers, not your computations. **Unclear answers or answers written elsewhere will be ignored.**

	-----Day 1-----	-----Day 2-----
Revenues		
Expenses		

4. (24 points, 2 points for each cell) PCo starts its business at the beginning of “Day” 1. The set of events for each day are listed below:
- Day 1:
 - ♦ PCo gets cash contribution of \$100 from its shareholders at the beginning of Day 1.
 - ♦ PCo buys equipment for \$60 at the beginning of Day 1. The useful life of the equipment is 3 days, its salvage value is \$0, and it is depreciated on a straight-line basis.
 - ♦ PCo generates revenues of \$73 and receives them in cash immediately.
 - ♦ PCo depreciates the equipment according to its depreciation policy.
 - Day 2:
 - ♦ PCo generates revenues of \$52 and receives them in cash immediately.
 - ♦ PCo depreciates the equipment according to its depreciation policy.
 - Day 3:
 - ♦ At the beginning of Day 3, i.e., before the equipment is depreciated for Day 3, PCo sells the equipment for \$45 in cash.

Fill in the table below based on the information provided above. Do your work on separate pieces of paper and write your final answers clearly in the cells assigned below. We need only your final answers, not your computations. **Unclear answers or answers written elsewhere will be ignored. Enclose cash outflows in parentheses.**

	-----Day 1-----	-----Day 2-----	-----Day 3-----
Revenues and Gains			
Expenses and Losses			
Operating cash inflows (outflows)			
Investing cash inflows (outflows)			

Answers

1.

	Day 1	Day 2	Day 3	Day 4
Revenues	0	0	55	0
Expenses	0	0	(33)	0
Operating cash flows	$(15)+10=(5)$	(26)	$(29)+28=(1)$	17
Investing cash flows	0	0	0	0
Financing cash flows	100	0	0	(11)

2.

	Day 1	Day 2	Day 3
Revenues	0	49	0
Expenses	0	(32)	0
Operating cash flows	(15)	39	(7)
Investing cash flows	0	0	0

3.

	Day 1	Day 2
Revenues	0	175
Expenses	$(90)+(20)=(110)$	(24)

4.

	Day 1	Day 2	Day 3
Revenues and Gains	73	52	25
Expenses and Losses	20	20	0
Operating cash flows	73	52	0
Investing cash flows	(60)	0	45

Part 3: Skills needed to get the most out of the course

1. (30 points) You have the following information from the balance sheet.

Beginning gross accounts receivable = \$110

Beginning allowance for bad debts = \$17

Beginning deferred revenue = \$87

Ending gross accounts receivable = \$300

Ending allowance for bad debts = \$29

Ending deferred revenue = \$42

Sales revenue for the year = \$542

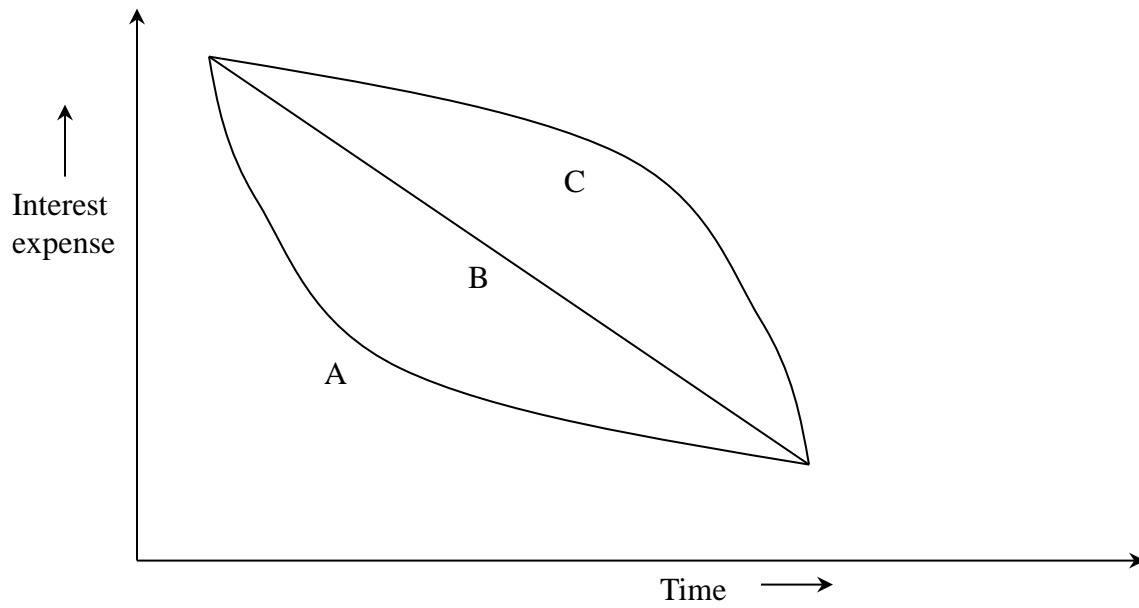
Bad debt expense [appears on the income statement] for the year = \$72

Cash received from customers during the year = _____

2. At the beginning of Year 1, a firm buys PP&E with a cost of \$92. The expected life of the equipment is 4 years and the expected salvage value is \$12. At the end of Year 2, the accumulated depreciation of the equipment is \$61. The equipment is sold for \$46 in cash at the beginning of Year 3. Assuming that there were no other events during Year 3, fill in the table below with the text of the items and all amounts **ONLY FOR YEAR 3**. Ignore taxes.

(4 points) Net income	
(4 points) Adjustment(s) to reconcile net income to operating cash flow	
(4 points) Operating cash flow subtotal=	=
(4 points) List investing cash flow item(s) in this space.	
(4 points) Investing cash flow subtotal =	= _____

3. (10 points) A firm takes a loan and agrees to repay it in equal installments over a period of time. Which one of the patterns below best describes the pattern of interest expenses over time? Circle A or B or C.



4. Acquisitions:

Acquirer's (ACo) balance sheet before it acquires TCo

A	+dr	-cr	L	-dr	+cr
Cash	2,000				
			E		
			Capital		2,000

Target's (TCo) balance sheet before it is acquired by ACo

A	+dr	-cr	L	-dr	+cr
Cash	140		Payables		620
PP&E	1,980		E		
			Capital		850
			Retained earnings		650

- ACo acquires TCo by asking TCo's shareholders to surrender their shares in exchange for ACo's shares. The market value of ACo's shares issued is \$3,900.
- Besides the acquisition, ACo and TCo had no other transactions.
- Fair value of TCo's identifiable assets and liabilities are as follows:

Fair values

A		L	
Cash	140	Payables	620
PP&E	2,480		
Patents	1,100		

4.1. (25 points) Consolidated balance sheet: Show your computations in or below the table.

A	L
	E

6. AdvCo provides services to its clients. On day 1, it receives an advance payment of \$100 for which it provides services on day 2. AdvCo has no expenses except taxes. AdvCo pays \$45 in cash as taxes on day 1. Any excess tax paid on day 1 is refunded on day 2. Write only in the spaces provided below. Assume a tax rate of 40%.

6.1. (10 points) Balance sheet at the end of day 1

-----A-----	-----L-----
	E

6.2. (10 points) Income statement for day 1

Revenues	
Expenses other than income taxes	
Earnings before tax	=
Current tax benefit (expense)	
Deferred tax benefit (expense)	
Total tax benefit (expense) or provision for income taxes	=
Net income or earnings after tax	= _____

6.3. (5 points) Operating section of the indirect cash flow statement for day 1

Net income	
Adjustments due to	
Operating cash flow _____	= _____
Investing cash flow	=
Financing cash flow	=
Net cash flow _____	= _____

Answers

1. 247

2.

Net income [gain on sale = 46 – (92-61)= 15]	15
Adjustment(s) to reconcile net income to operating cash flow	
Gain on sale	(15)
Operating cash flow =	= 0
Proceeds from sale	46
Investing cash flow =	=46

3.

A	+dr	-cr	L	-dr	+cr
Cash	2,140		Payables		620
PP&E	2,480				
Patents	1,100		E		
Goodwill	800		Capital		5,900

4. C

5.

5.1. Balance sheet at the end of day 1

A	+dr	-cr	L	-dr	+cr
Cash	55		Deferred revenue		100
Taxes refundable	5		E		
Deferred tax asset	40				

5.2. Income statement for day 1

Revenues	0
Expenses other than income taxes	0
Earnings before tax	=0
Current tax benefit (expense)	(40)
Deferred tax benefit (expense)	40
Total tax benefit (expense) or provision for income taxes	=0
Net income or earnings after tax	=0

5.3. Cash flow statement for day 1

Net income	0
Adjustments due to	
Increase in deferred revenue [Operating receipts exceed revenues]	100
Back out non-cash deferred tax benefit	(40)
Increase in taxes refundable [taxes paid exceed current tax expense]	(5)
Operating cash flow	55
Investing cash flow	0
Financing cash flow	0
Net cash flow	55