

York University AP/ADMS2500.03 Introduction to Financial Accounting
Midterm Examination #2

Time: 3.0 hours

Winter 2013

Questions: 40

Instructions:

1. **Submit:** Only the pink mark sense sheet will be collected: you may keep this midterm examination paper. Mark your answers on it for later reference. Ensure your name is on the pink mark sense sheet.

2. **Mark Sense Sheet:**

- Record your name and student number and answer all questions on the computer mark sense sheet provided with an HB (soft lead) pencil. Bring several pencils in case one breaks. The computer will not recognize ink or hard lead pencils
- Test Form is for the exam version you are writing (A, B or C) and Code is your Section (in the left column).
- Fill in the bubbles for your name and student number in pencil (your phone number is not required). Leave the last column of the student number BLANK
- If you change an answer, use a high quality eraser to completely remove the previous mark. If the computer senses two answers to a question, only the first scanned will be recognized.

3. **Exam Aids:**

- Only calculators without alphanumeric programmable memories are allowed. It is strongly suggested you bring a couple of cheap 4 function computers to the exam in case one fails. Be prepared to be challenged by invigilators if you bring a “fancy” calculator.
- Compact foreign language/English dictionaries may be used. However, these will be examined by invigilators. If there are any loose pages or handwriting in the dictionary, it will be seized and you will be charged with academic dishonesty.
- In 2500, invigilators answer no questions of interpretation. They will pass along questions regarding possible errors/ typos/missing data to the head invigilator. If you believe a question contains an error and do not receive a response, make a detailed note at the back of your answer (pink) sheet.

4. **Exam Strategy**

- Careful budgeting of time on an accounting exam is essential. Bring a watch and check your progress regularly. Poor time management is the most common reason for poor exam performance in accounting.
- It is always a good idea to attempt the questions you deem easiest first. In an interrupted exam that is not restarted, your exam will be scored based on questions attempted.
- It is essential to transfer your answers to the grading sheet after each question in case the exam is interrupted by fire alarm.
- The last ten minutes of an exam should be devoted to double checking your transfers. What you submit is what is graded. If you have not transferred your answers to the mark sense sheet at the end of the exam, the invigilator will not wait. Your answer sheet will be seized and it will be graded based on whatever questions have choices filled in.
- Remember there is no penalty for guessing on a multiple choice computer graded exam. Submit a choice for every question. Also note that in 2500, the choice of *None of the above* does indeed represent a frequent correct choice to questions.

5. Exam room regulations:

- All personal belongings either on the floor or at the front of the exam room. All items on your desk will be examined by invigilators
- Bring appropriate ID as proof of registration. You will be required to sign in and show appropriate documentation. Students without ID will be allowed to write the exam, but will be photographed and asked to submit registration and photo ID to the School of Administrative Studies the next day.
- No student may leave the exam in the first hour. No student may start the exam after an hour. Students requiring restroom visits must be accompanied by an invigilator.
- The proctors will announce when there are 15 minutes remaining and any answers not transferred should be recorded at this time. No one is to leave their seat in the last 15 minutes.
- When time is called, the proctors will go down the rows collecting your answer sheets and this exam paper. They will not wait and they will not accept your sheet once they have passed. Any violation of this protocol will result in a grade of zero recorded for the exam.

6. Fire Alarms

- A frequent occurrence in York exams. In the event of a fire alarm, you are to leave your exam and answer sheet face down on your desk and immediately proceed outside with coats and all personal belongings. Print your surname on the back of the exam so you know which seat to return to. An invigilator will lead the group outside to a place of safety. There is to be no talking during the evacuation or outside. Most rooms are cleared within 30 minutes of the alarm so that exams can recommence. You will be told after this time whether to reenter the room and recommence the exam or to go home.

7. Academic Dishonesty

- You are reminded that cheating is a serious offense which can result in expulsion from university
- Exams at York are held in regular classrooms, which may involve tiered seating. Consequently, neck exercises are not allowed during exams. First instance of wandering eyes has the student relocated to the front of the room. Second instance results in seizure of paper.

8. Special Instructions

- Double check your transfers to the pink mark sense sheet.
- This exam contains several groups of questions based on the same set up. These are problems (similar to those in the e-book or class examples) that have been arranged as multiple choice questions
- The exam clearly indicates when a group of questions are related to a single data set as: “Use the following data to answer Questions 1 to 5”.
- Otherwise, assume each question is independent of the others
- There are four present value tables appended to this exam in case you need to do time value of money computations
- With 180 minutes to do 50 questions, you should budget your time carefully and not spend more than 3 minutes on a question. If you do, you risk not finishing the exam.

9. Reminder

This is a reminder to Submit the pink mark sense sheet only, this exam paper will not be collected. Ensure your name is on the pink mark sense sheet and that you have marked your answers in this paper so you can check your answers when the correct answers are published.

Use the following data to answer Questions 1 to 5

Jennifer Singh of Great North Properties just received the bank statement and realized she needs to do a bank reconciliation. She has the following information to work with:

February 28, 2013: Balance per Bank \$5,875
Deposits in transit: \$1,600
Outstanding Cheques: Cheque 437 - \$285, Cheque 438 - \$320,
Cheque 439 - \$85, Cheque 440 - \$205, Cheque 441 - \$460.

February 28, 2013: a) Balance per Books: \$3,147
b) Bank Error: The bank mistakenly deducted \$100 from a cheque written by another company but was thought to be written by Great North Properties.
c) Electronic funds transfer (EFT) receipt of rent revenue: \$905
d) Bank collection of Note Receivable: \$2,115, which includes interest of \$115.
e) Book error: Cheque 433 for \$160 paid to Excellent Company on account was recorded as \$610.
f) Interest earned: \$30
g) Bank service charge: \$15
h) NSF Cheque from I.L. Steen: \$52
i) EFT payment of insurance expenses: \$360

1. The amount of deposit in transit should be adjusted as
 - A) An addition of \$1,600 per Bank
 - B) A deduction of \$1,600 per Bank
 - C) An addition of \$1,600 per Book
 - D) A deduction of \$1,600 per Book
 - E) None of the above

2. The dollar amount of outstanding cheques at February 28th is:
 - A) 1,700
 - B) 1,355
 - C) 2,155
 - D) 3,500
 - E) None of the above.

3. The unadjusted balance of the Bank account at February 28th is:
 - A) 6,647
 - B) 3,147
 - C) 5,875
 - D) 7,575
 - E) None of the above.

4. The adjusted balance of the Bank account at February 28th is:
- A) 6,220
 - B) 6,120
 - C) 6,647
 - D) 6,272
 - E) None of the above.
5. Which of the following adjustments to the Book balance was made at February 28th?
- A) Deduct service charge \$15.
 - B) Add rent revenue of \$905.
 - C) Deduct EFT payment of insurance \$360.
 - D) All of the above.
 - E) None of the above.

Use the following data to answer Questions 6 to 10

Delightful Food Corporation had the following transactions during the current year:

January 1 to March 31, Sales were \$57,000 of which \$16,000 were for cash.

April 18. Received a \$28,000, 60 Day, 5% note from Justin Bieber for goods sold.

April 30. Received payments on account of \$13,000.

May 14. Wrote off customer Naomi Watts account against the Allowance for Uncollectible Accounts , \$5,900.

July 18. Received payment of Justin Bieber's account in full.

Sept. 10. Gave a \$16,000, 90-day, 7% note to R.K. Mentor in payment of account.

Sept. 18. Received payment of Naomi Watt's account, written off May 14th.

Dec. 9. Paid principal and interest due on note to R.K. Mentor.

Please note: use the 360 day year for purposes of interest computations.

6. The balance of Accounts Receivable at Sept. 11th is:
- A) 41,000
 - B) 21,200
 - C) 22,100*
 - D) 13,000
 - E) None of the above.
7. The balance of Notes Payable at Sept. 11th is:
- A) 0
 - B) 16,000
 - C) 16,400
 - D) 15,400
 - E) None of the above.

8. The journal entry on May 14th has the following:
- A) Cr. Notes Receivable – Naomi Watts 5,900
 - B) Dr. Accounts Receivable – Naomi Watts 5,900
 - C) Cr. Allowance for Uncollectible Accounts 5,900
 - D) Dr. Allowance for Uncollectible Accounts 5,900
 - E) None of the above.
9. On July 18th, cash is received in the amount of:
- A) 28,230
 - B) 28,233
 - C) 28,266
 - D) 28,133
 - E) None of the above.
10. The journal entries for Sept. 18th include the following:
- A) Dr. Notes Receivable – Naomi Watts 5,900
 - B) Cr. Cash 5,900
 - C) Dr. Allowance for Uncollectible Accounts 5,900
 - D) Cr. Allowance for Uncollectible Accounts 5,900
 - E) None of the above

Use the following data to answer Questions 11 and 12

The Accounts Receivable ledger consisted of \$320,000 in debit balance and Allowance for Uncollectible Accounts balance of \$6,400 in debit balance.

The following schedule shows the company's analysis of Accounts Receivable balances at December 31st, and the percentage of each group that have proven uncollectible in the past.

	Amount	Percent Uncollectible
Current	\$175,000	0.8%
0-60 Days Past Due	\$70,000	3.0%
61-180 Days Past Due	\$60,000	5.0%
Over 180 Days Past Due	\$15,000	60.0%
Total Past Due	\$320,000	

Note: if needed, prepare the adjusting journal entry to record the provision for credit losses for the year.

11. The adjustment to the Allowance for Uncollectible Accounts at Dec. 31st is:
- A) 21,900
 - B) 15,500
 - C) 9,100
 - D) 6,400
 - E) None of the above.

Answer: Desired balance of

$AFDA = 175,000 * 0.8\% + 70,000 * 3\% + 60,000 * 5\% + 15,000 * 60\% = 15,500$

Adjustment to AFDA = $15,500 + 6,400 = 21,900$

12. The balance of the account Allowance for Uncollectible Accounts at Dec. 31st after the adjustment is:

- A) 0
- B) 6,400
- C) 15,500
- D) 9,100
- E) None of the above.

Use the following data to answer Questions 13 to 16

ABC Company uses a periodic inventory system. The following information was available from their inventory records for July 2012:

	Units Purchased	Unit Cost	Total Costs	Units Sold
Opening Inventory:	800 units	\$7.00	\$5,600	
Purchases:				
July 6	1,600 units	\$8.00	\$12,800	
July 16	3,400 units	\$8.50	\$28,900	
Sales:				
July 7				1,800 units
July 27				3,300 units

13. Using the average cost inventory method what would be the inventory valuation at July 31, 2012 (rounded to the nearest dollar)?

- A) \$7.00
- B) \$8.16
- C) \$8.34
- D) \$8.50
- E) None of the above.

14. Using the FIFO cost flow assumption what would be the cost of goods sold for July 2012?

- A) \$35,700
- B) \$41,350
- C) \$43,050
- D) \$43,800
- E) None of the above.

15. Using the FIFO cost flow assumption what would be the value of inventory at July 31, 2012?

- A) \$4,900
- B) \$5,600
- C) \$5,708
- D) \$5,950
- E) None of the above.

16. If ABC Company wanted to report the highest net income for the July, which inventory cost flow assumption should they use?

- A) FIFO
- B) Net realizable value
- C) Average cost
- D) Specific identification
- E) None of the above.

Use the following data to answer Questions 17 and 18

You are an accounting student at Atkinson, completing a 5 year Accounting Program who lives on campus and rents an apartment. You pay \$6,000 at the end of each year for the next five years for rent.

17. What is the present value of the rental payments when the payments are discounted at a rate of 12% per year (rounded to the nearest dollar)?

- A) 21,629
- B) 31,348
- C) 25,675
- D) 23,432
- E) None of the above.

18. What is the present value of the rental payments if instead the rental payments were \$1,500 per quarter and payments are discounted at a rate of 12% compounded quarterly (rounded to the nearest dollar)?

- A) 23,432
- B) 25,657
- C) 22,316
- D) 21,629
- E) None of the above.

Questions 19-40 are individual questions.

19. What is the concept that people would rather receive a given amount of money sooner rather than later?
- A) Time value of money
 - B) Purchasing power
 - C) Unit-of-measure assumption
 - D) Interest rate theory
 - E) None of the above.
20. Assume at the beginning of 2012 Construction Co. deposits \$250 million in an account with BIG MONEY BANK as a commitment to a large construction project to be completed December 31, 2015. How much will be on deposit at the end of 4 years if interest is compounded semi-annually at 10%?
- A) 350,550,000
 - B) 361,460,000
 - C) 374,950,000
 - D) 369,375,000
 - E) None of the above.
21. Which of the following is an advantage of allowing customers to buy on credit?
- A) It lengthens the cash cycle.
 - B) It allows the company to claim bad debt expense.
 - C) It increases sales.
 - D) It increases the assets on the balance sheet.
 - E) None of the above.
22. You have just graduated from York University and you owe OSAP \$25,000. If you make quarterly payments to pay the loan off in five (5) years at an interest rate of 4%, how much is each payment?
- A) 1,302.49
 - B) 1,334.98
 - C) 1,250.01
 - D) 1,385.38
 - E) None of the above.
23. The concept of 'segregation of duties' principle of internal control entails
- A) breaking administrative tasks into atomistic components.
 - B) separating the bank reconciliation and cash transactions from the handling of cash.
 - C) discouraging collusion by two or more employees.
 - D) All of the above.
 - E) None of the above.

24. Internal control comprises the plan of organization and all of the co-ordinate methods, measures and systems adopted within the organization to

- A) safeguard assets.
- B) adhere to shareholder requirements for dividend payment.
- C) aid in the recording of transactions that occur within an organization.
- D) provide guidance in the preparation of the 10 column worksheet.
- E) None of the above.

25. Which of the following should be included in the cost of the inventory?

- A) Salaries paid to warehouse employees.
- B) The construction cost of shelves used to store inventory.
- C) Shipping and handling on inventory purchases.
- D) Advertising of inventory for sale.
- E) None of the above.

26. A company that makes the following journal entry at the time of purchasing inventory is using which of the following inventory systems?

- Dr. Inventory
 Cr. Accounts Payable
- A) Periodic system
 - B) Perpetual system
 - C) Just-in-time system
 - D) Specific identification system
 - E) None of the above.

27. All of the following are affected by the cost flow assumption used for inventory except?

- A) Net income
- B) Inventory on the balance sheet
- C) The current ratio
- D) Cash flow
- E) None of the above.

28. Wilfrid Ltd recently purchased a new delivery truck and incurred the following costs: invoice price \$45,000, taxes, delivery and preparation \$8,300. They had the truck painted with the company logo for \$650 and paid the interest of \$500 for the \$45,000 borrowed to purchase the truck. What is the cost of the truck for accounting purposes?

- A) \$45,000
- B) \$53,300
- C) \$53,950
- D) \$54,400
- E) None of the above.

29. Which of the following would be an example of a repair expense for a car?

- A) A new, larger transmission.
- B) Addition of a trailer hitch, to be able to tow additional loads.
- C) Replacement of the brakes.
- D) Painting the company logo on the side of the car.
- E) None of the above.

30. Ashley Industries bought a property with land and a building on it for \$20,000,000. An independent appraisal of the land put the value of the land between \$5,000,000 and \$8,000,000. If Ashley's financial reporting objective is to minimize taxes how should the cost be allocated to the two assets?

- | | <u>Land</u> | <u>Building</u> |
|----|--------------------|-----------------|
| A) | \$5,000,000 | \$15,000,000* |
| B) | \$6,500,000 | \$13,500,000 |
| C) | \$8,000,000 | \$12,000,000 |
| D) | \$10,000,000 | \$10,000,000 |
| E) | None of the above. | |

31. All of the following terms can be used for the process of allocating the cost of a capital asset to expense over time except

- A) Amortization
- B) Depletion
- C) Depreciation
- D) Expensing
- E) None of the above.

32. On January 1, 2012, LaMonte Paint and Repair purchased a piece of equipment that cost \$300,000. It has an estimated useful life 10 years over which it was expected to produce 100,000 units of output. The equipment is expected to have an estimated residual value of \$80,000. The company amortizes all equipment using the units of production method. In the first two years of operation, the asset produced units of output as follows: 2012, 18,000 units; 2013, 15,000 units. The accounting year ends December 31. What will the amortization expense and accumulated amortization account balances be (after adjusting entries) at the end of 2012?

- | | Amortization | Accumulated |
|----|--------------------|--------------|
| | Expense | Amortization |
| A) | \$54,000 | \$54,000 |
| B) | \$54,000 | \$0 |
| C) | \$33,000 | \$33,000 |
| D) | \$39,600 | \$39,600 |
| E) | None of the above. | |

33. On January 1, 2010, Lasche Auto Sales and Service purchased a vehicle for use in the business at a cost of \$22,000. The vehicle has a 4-year useful life with an expected residual value of \$2,000. The company has a December 31 year-end and uses straight-line amortization for all capital assets. On January 1, 2012, the company sold the vehicle for proceeds of \$8,000.

What gain or loss did Lasche Auto report on its 2012 income statement?

- A) \$3,000 loss
- B) \$3,000 gain
- C) \$4,000 loss
- D) \$4,000 gain
- E) None of the above.

34. Hortons Inc made an offer for \$10,000,000 to purchase Churchill Corporation. At the time of the offer Churchill Corporation had net assets with a book value of \$6,500,000 and a market value of \$8,200,000. For various reasons the purchase did not take place. How much is the value of goodwill Churchill can now report on their balance sheet?

- A) \$0
- B) \$1,700,000
- C) \$1,800,000
- D) \$3,500,000
- E) None of the above.

35. If a company decides to capitalize an expenditure as an asset instead of expensing it, what is the effect on the cash flow statement in the year of the expenditure?

- | | <u>Cash from
Operations</u> | <u>Cash from
Investing Activities</u> |
|----|---------------------------------|---|
| A) | Higher | Higher |
| B) | Higher | Lower |
| C) | Lower | Higher |
| D) | Lower | Lower |
| E) | None of the above. | |

36. Which of the following is a characteristic of a liability?

- A) It must require a sacrifice of future resources.
- B) It may be the result of future transactions.
- C) The exact amount due must be known.
- D) It may be avoidable.
- E) None of the above.

37. The following amounts for the month of November were taken from the payroll register of May Flower Company.

Salaries	\$12,000
CPP withheld	550
Income taxes withheld	2,500
Medical insurance deductions	450
EI withheld	234
Union dues withheld	216

The journal entry to record the monthly payroll on November 30 would include a

- A) debit to Salaries Expense for \$12,000.
 - B) credit to Salaries Payable for \$12,000.
 - C) debit to Salaries Payable for \$8,050.
 - D) debit to Salaries Expense for \$8,050.
 - E) None of the above.
38. Which of the following is correct with respect to a contingent liability that is "reasonably possible" but "cannot reasonably be estimated"?
- A) It must be recorded and reported as a liability.
 - B) It does not need to be recorded or reported as a liability.
 - C) It must only be disclosed as a note to the financial statements.
 - D) It must be reported as a liability, but not recorded.
 - E) None of the above.
39. An accrued liability results from an expense that is which of the following?
- A) Incurred and paid.
 - B) Incurred but not yet paid.
 - C) Paid but not yet incurred.
 - D) Neither incurred nor paid.
 - E) None of the above.
 - F)
40. All of the following statements about current liabilities are true except
- A) Current liabilities are valued at their net present value.
 - B) Current liabilities are important for assessing short-term liquidity.
 - C) Current liabilities will be satisfied in a year or one operating cycle.
 - D) The difference between the net present value and the face value of a current liability is small.
 - E) None of the above.

Table A-1 Future Value Interest Factors for One Dollar Compounded at k Percent for n Periods: $FVIF_{k,n} = (1 + k)^n$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.1600	1.2000	1.2400	1.2500	1.3000
2	1.0201	1.0404	1.0609	1.0816	1.1025	1.1236	1.1449	1.1664	1.1881	1.2100	1.2321	1.2544	1.2769	1.2996	1.3225	1.3456	1.4400	1.5376	1.5625	1.6900
3	1.0303	1.0612	1.0927	1.1249	1.1576	1.1910	1.2250	1.2597	1.2950	1.3310	1.3676	1.4049	1.4429	1.4815	1.5209	1.5609	1.7200	1.9066	1.9531	2.1970
4	1.0406	1.0824	1.1255	1.1699	1.2155	1.2625	1.3108	1.3605	1.4116	1.4641	1.5181	1.5735	1.6305	1.6890	1.7490	1.8106	2.0736	2.3642	2.4414	2.8561
5	1.0510	1.1041	1.1593	1.2167	1.2763	1.3382	1.4026	1.4693	1.5386	1.6105	1.6851	1.7623	1.8424	1.9254	2.0114	2.1003	2.4883	2.9316	3.0518	3.7129
6	1.0615	1.1262	1.1941	1.2653	1.3401	1.4185	1.5007	1.5869	1.6771	1.7716	1.8704	1.9738	2.0820	2.1950	2.3131	2.4364	2.9600	3.6352	3.8147	4.8268
7	1.0721	1.1487	1.2299	1.3159	1.4071	1.5036	1.6058	1.7138	1.8280	1.9487	2.0762	2.2107	2.3526	2.5023	2.6600	2.8262	3.5832	4.5077	4.7684	6.2749
8	1.0829	1.1717	1.2668	1.3686	1.4775	1.5938	1.7182	1.8509	1.9926	2.1436	2.3045	2.4760	2.6584	2.8526	3.0590	3.2784	4.2998	5.5895	5.9605	8.1573
9	1.0937	1.1951	1.3048	1.4233	1.5513	1.6895	1.8385	1.9990	2.1719	2.3579	2.5580	2.7731	3.0040	3.2519	3.5179	3.8030	5.1598	6.9310	7.4506	10.604
10	1.1046	1.2190	1.3439	1.4802	1.6289	1.7908	1.9672	2.1589	2.3674	2.5937	2.8394	3.1058	3.3946	3.7072	4.0456	4.4114	6.1917	8.5944	9.3132	13.786
11	1.1157	1.2434	1.3842	1.5395	1.7103	1.8983	2.1049	2.3316	2.5804	2.8531	3.1518	3.4785	3.8359	4.2262	4.6524	5.1173	7.4301	10.657	11.642	17.922
12	1.1268	1.2682	1.4258	1.6010	1.7959	2.0122	2.2522	2.5182	2.8127	3.1384	3.4985	3.8960	4.3345	4.8179	5.3503	5.9360	8.9161	13.215	14.552	23.298
13	1.1381	1.2936	1.4685	1.6651	1.8856	2.1329	2.4098	2.7196	3.0658	3.4523	3.8833	4.3635	4.8980	5.4924	6.1528	6.8858	10.699	16.386	18.190	30.288
14	1.1495	1.3195	1.5126	1.7317	1.9799	2.2609	2.5785	2.9372	3.3417	3.7975	4.3104	4.8871	5.5348	6.2613	7.0757	7.9875	12.839	20.319	22.737	39.374
15	1.1610	1.3459	1.5580	1.8009	2.0789	2.3966	2.7590	3.1722	3.6425	4.1772	4.7846	5.4736	6.2543	7.1379	8.1371	9.2655	15.407	25.196	28.422	51.186
16	1.1726	1.3728	1.6047	1.8730	2.1829	2.5404	2.9522	3.4259	3.9703	4.5950	5.3109	6.1304	7.0673	8.1372	9.3576	10.748	18.488	31.243	35.527	66.542
17	1.1843	1.4002	1.6528	1.9479	2.2920	2.6928	3.1588	3.7000	4.3276	5.0545	5.8951	6.8660	7.9661	9.2765	10.761	12.468	22.186	38.741	44.409	86.504
18	1.1961	1.4282	1.7024	2.0258	2.4066	2.8543	3.3799	3.9960	4.7171	5.5599	6.5436	7.6900	9.0243	10.575	12.375	14.463	26.623	48.039	55.511	112.455
19	1.2081	1.4568	1.7535	2.1068	2.5270	3.0256	3.6165	4.3157	5.1417	6.1159	7.2633	8.6128	10.197	12.056	14.232	16.777	31.948	59.568	69.389	146.192
20	1.2202	1.4859	1.8061	2.1911	2.6533	3.2071	3.8697	4.6610	5.6044	6.7275	8.0623	9.6463	11.523	13.743	16.367	19.461	38.338	73.864	86.736	190.050
21	1.2324	1.5157	1.8603	2.2788	2.7860	3.3996	4.1406	5.0338	6.1088	7.4002	8.9492	10.804	13.021	15.668	18.822	22.574	46.005	91.592	108.420	247.065
22	1.2447	1.5460	1.9161	2.3699	2.9253	3.6035	4.4304	5.4365	6.6586	8.1403	9.9336	12.100	14.714	17.861	21.645	26.186	55.206	113.574	135.525	321.184
23	1.2572	1.5769	1.9736	2.4647	3.0715	3.8197	4.7405	5.8715	7.2579	8.9543	11.026	13.552	16.627	20.362	24.891	30.376	66.247	140.831	169.407	417.539
24	1.2697	1.6084	2.0328	2.5633	3.2251	4.0489	5.0724	6.3412	7.9111	9.8497	12.239	15.179	18.788	23.212	28.625	35.236	79.497	174.631	211.758	542.801
25	1.2824	1.6406	2.0938	2.6658	3.3864	4.2919	5.4274	6.8485	8.6231	10.835	13.585	17.000	21.231	26.462	32.919	40.874	95.396	216.542	264.698	705.641
30	1.3478	1.8114	2.4273	3.2434	4.3219	5.7435	7.6123	10.063	13.268	17.449	22.892	29.960	39.116	50.950	66.212	85.850	237.376	634.820	807.794	*
35	1.4166	1.9999	2.8139	3.9461	5.5160	7.6861	10.677	14.785	20.414	28.102	38.575	52.800	72.069	98.100	133.176	180.314	590.668	*	*	*
36	1.4308	2.0399	2.8983	4.1039	5.7918	8.1473	11.424	15.968	22.251	30.913	42.818	59.136	81.437	111.834	153.152	209.164	708.802	*	*	*
40	1.4889	2.2080	3.2620	4.8010	7.0400	10.286	14.974	21.725	31.409	45.259	65.001	93.051	132.782	188.884	267.864	378.721	*	*	*	*
50	1.6446	2.6916	4.3839	7.1067	11.467	18.420	29.457	46.902	74.358	117.391	184.565	289.002	450.736	700.233	*	*	*	*	*	*

Table A-2 Future Value Interest Factors for a One-Dollar Annuity Compounded at k Percent for n Periods: $FVIFA_{k,n} = [(1 + k)^n - 1] / k$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	1.0000	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.1600	1.2000	1.2400	1.2500	1.3000
2	2.0100	2.0200	2.0300	2.0400	2.0500	2.0600	2.0700	2.0800	2.0900	2.1000	2.1100	2.1200	2.1300	2.1400	2.1500	2.1600	2.2000	2.2400	2.2500	2.3000
3	3.0301	3.0604	3.0909	3.1216	3.1525	3.1836	3.2149	3.2464	3.2781	3.3100	3.3421	3.3744	3.4069	3.4396	3.4725	3.5056	3.6400	3.7776	3.8125	3.9900
4	4.0604	4.1216	4.1836	4.2465	4.3101	4.3746	4.4399	4.5061	4.5731	4.6410	4.7097	4.7793	4.8498	4.9211	4.9934	5.0665	5.3680	5.6842	5.7656	6.1870
5	5.1010	5.2040	5.3091	5.4163	5.5256	5.6371	5.7507	5.8666	5.9847	6.1051	6.2278	6.3528	6.4803	6.6101	6.7424	6.8771	7.4416	8.0484	8.2070	9.0431
6	6.1520	6.3081	6.4684	6.6330	6.8019	6.9753	7.1533	7.3359	7.5233	7.7156	7.9129	8.1152	8.3227	8.5355	8.7537	8.9775	9.9299	10.980	11.259	12.756
7	7.2135	7.4343	7.6625	7.8983	8.1420	8.3938	8.6540	8.9228	9.2004	9.4872	9.7833	10.089	10.405	10.730	11.067	11.414	12.916	14.615	15.073	17.583
8	8.2857	8.5830	8.8923	9.2142	9.5491	9.8975	10.260	10.637	11.028	11.436	11.859	12.300	12.757	13.233	13.727	14.240	16.499	19.123	19.842	23.858
9	9.3685	9.7546	10.159	10.583	11.027	11.491	11.978	12.488	13.021	13.579	14.164	14.776	15.416	16.085	16.786	17.519	20.799	24.712	25.802	32.015
10	10.462	10.950	11.464	12.006	12.578	13.181	13.816	14.487	15.193	15.937	16.722	17.549	18.420	19.337	20.304	21.321	25.959	31.643	33.253	42.619
11	11.567	12.169	12.808	13.486	14.207	14.972	15.784	16.645	17.560	18.531	19.561	20.655	21.814	23.045	24.349	25.733	32.150	40.238	42.566	56.405
12	12.683	13.412	14.192	15.026	15.917	16.870	17.888	18.977	20.141	21.384	22.713	24.133	25.650	27.271	29.002	30.850	39.581	50.895	54.208	74.327
13	13.809	14.680	15.618	16.627	17.713	18.882	20.141	21.495	22.953	24.523	26.212	28.029	29.985	32.089	34.352	36.786	48.497	64.110	68.760	97.625
14	14.947	15.974	17.086	18.292	19.599	21.015	22.550	24.215	26.019	27.975	30.095	32.393	34.883	37.581	40.505	43.672	59.196	80.496	86.949	127.913
15	16.097	17.293	18.599	20.024	21.579	23.276	25.129	27.152	29.361	31.772	34.405	37.280	40.417	43.842	47.580	51.660	72.035	100.815	109.687	167.286
16	17.258	18.639	20.157	21.825	23.657	25.673	27.888	30.324	33.003	35.950	39.190	42.753	46.672	50.980	55.717	60.925	87.442	126.011	138.109	218.472
17	18.430	20.012	21.762	23.698	25.840	28.213	30.840	33.750	36.974	40.545	44.501	48.884	53.739	59.118	65.075	71.673	105.931	157.253	173.636	285.014
18	19.615	21.412	23.414	25.645	28.132	30.906	33.999	37.450	41.301	45.599	50.396	55.750	61.725	68.394	75.836	84.141	128.117	195.994	218.045	371.518
19	20.811	22.841	25.117	27.671	30.539	33.760	37.379	41.446	46.018	51.159	56.939	63.440	70.749	78.969	88.212	98.603	154.740	244.033	273.556	483.973
20	22.019	24.297	26.870	29.778	33.066	36.786	40.995	45.762	51.160	57.275	64.203	72.052	80.947	91.025	102.444	115.380	186.688	303.601	342.945	630.165
21	23.239	25.783	28.676	31.969	35.719	39.993	44.865	50.423	56.765	64.002	72.265	81.699	92.470	104.768	118.810	134.841	225.026	377.465	429.681	820.215
22																				

Table A-3 Present Value Interest Factors for One Dollar Discounted at k Percent for n Periods: $PVIF_{k,n} = 1 / (1 + k)^n$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	0.7432	0.6944	0.6504	0.6400	0.5917
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.5787	0.5245	0.5120	0.4552
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.4823	0.4230	0.4096	0.3501
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4019	0.3411	0.3277	0.2693
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323	0.4104	0.3349	0.2751	0.2621	0.2072
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	0.3538	0.2791	0.2218	0.2097	0.1594
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	0.3050	0.2326	0.1789	0.1678	0.1226
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.1938	0.1443	0.1342	0.0943
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.1615	0.1164	0.1074	0.0725
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1346	0.0938	0.0859	0.0558
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1122	0.0757	0.0687	0.0429
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.0935	0.0610	0.0550	0.0330
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.0779	0.0492	0.0440	0.0254
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.1079	0.0649	0.0397	0.0352	0.0195
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069	0.0930	0.0541	0.0320	0.0281	0.0150
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078	0.0929	0.0802	0.0451	0.0258	0.0225	0.0116
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808	0.0691	0.0376	0.0208	0.0180	0.0089
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829	0.0703	0.0596	0.0313	0.0168	0.0144	0.0068
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611	0.0514	0.0261	0.0135	0.0115	0.0053
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926	0.0768	0.0638	0.0531	0.0443	0.0217	0.0109	0.0092	0.0040
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560	0.0462	0.0382	0.0181	0.0088	0.0074	0.0031
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601	0.0491	0.0402	0.0329	0.0151	0.0071	0.0059	0.0024
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431	0.0349	0.0284	0.0126	0.0057	0.0047	0.0018
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471	0.0378	0.0304	0.0245	0.0105	0.0046	0.0038	0.0014
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196	0.0151	0.0116	0.0042	0.0016	0.0012	*
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189	0.0139	0.0102	0.0075	0.0055	0.0017	0.0005	*	*
36	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0449	0.0323	0.0234	0.0169	0.0123	0.0089	0.0065	0.0048	0.0014	*	*	*
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0026	0.0007	*	*	*
50	0.6080	0.3715	0.2281	0.1407	0.0872	0.0543	0.0339	0.0213	0.0134	0.0085	0.0054	0.0035	0.0022	0.0014	0.0009	0.0006	*	*	*	*

Table A-4 Present Value Interest Factors for a One-Dollar Annuity Discounted at k Percent for n Periods: $PVIFA = [1 - 1/(1 + k)^n] / k$

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257	1.6052	1.5278	1.4568	1.4400	1.3609
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.1065	1.9813	1.9520	1.8161
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.5887	2.4043	2.3616	2.1662
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	2.9906	2.7454	2.6893	2.4356
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.3255	3.0205	2.9514	2.6427
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0386	3.6046	3.2423	3.1611	2.8021
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5349	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3436	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.0310	3.5655	3.4631	3.0190
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.1925	3.6819	3.5705	3.0915
11	10.368	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337	5.0286	4.3271	3.7757	3.6564	3.1473
12	11.255	10.575	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5.1971	4.4392	3.8514	3.7251	3.1903
13	12.134	11.348	10.635	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218	5.8424	5.5831	5.3423	4.5327	3.9124	3.7801	3.2233
14	13.004	12.106	11.296	10.563	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245	5.4675	4.6106	3.9616	3.8241	3.2487
15	13.865	12.849	11.938	11.118	10.380	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	4.6755	4.0013	3.8593	3.2682
16	14.718	13.578	12.561	11.652	10.838	10.106	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542	5.6685	4.7296	4.0333	3.8874	3.2832
17	15.562	14.292	13.166	12.166	11.274	10.477	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291	6.3729	6.0472	5.7487	4.7746	4.0591	3.9099	3.2948
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	4.8122	4.0799	3.9279	3.3037
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.6036	8.9501	8.3649	7.8393	7.3658	6.9380	6.5504	6.1982	5.8775	4.8435	4.0967	3.9424	3.3105
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9288	4.8696	4.1103	3.9539	3.3158
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.2922	8.6487	8.0751	7.5620	7.1016	6.6870	6.3125	5.9731	4.8913	4.1212	3.9631	3.3198
22	19.660	17.658	15.937	14.4																

SOLUTIONS

Questions	Answer	Questions	Answer
1	A	21	C
2	B	22	D
3	C	23	D
4	A	24	A
5	D	25	C
6	C	26	B
7	B	27	D
8	D	28	C
9	B	29	C
10	D	30	A
11	A	31	D
12	C	32	D
13	B Note: The exact answer is 8.16. If rounded to the nearest dollar, E is correct as well.	33	C
14	B	34	A
15	D	35	B
16	A	36	A
17	A	37	A
18	C	38	C
19	A	39	B
20	D	40	A