

2012 Level I Mock Exam: Morning Session

The morning session of the 2012 Level I Chartered Financial Analyst (CFA®) Mock Examination has 120 questions. To best simulate the exam day experience, candidates are advised to allocate an average of 1.5 minutes per question for a total of 180 minutes (3 hours) for this session of the exam.

Questions	Topic	Minutes
1–18	Ethical and Professional Standards	27
19–32	Quantitative Methods	21
33–44	Economics	18
45–68	Financial Statement Analysis	36
69–78	Corporate Finance	15
79–90	Equity Investments	18
91–96	Derivative Investments	9
97–108	Fixed Income Investments	18
109–114	Alternative Investments	9
115–120	Portfolio Management	9
	Total:	180

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Questions 1 through 18 relate to Ethical and Professional Standards

1. Which of the following *least likely* reflects the two primary principles of the CFA Institute Rules of Procedure for Proceedings Related to Professional Conduct?
- A. Confidentiality of proceedings
 - B. Fair process to the member and candidate
 - C. Public disclosure of disciplinary sanctions

Answer = C

“Code of Ethics and Standards of Professional Conduct,” CFA Institute
2012 Modular Level I, Vol. 1, p. 8
Study Session 1-1-a

Describe the structure of the CFA Institute Professional Conduct Program and the process for the enforcement of the Code and Standards.

C is correct because the two principles of the Rules of Procedure for Proceedings Related to Professional Conduct are confidentiality of proceedings and fair process to the member and candidate.

2. Fundamental Asset Managers claims compliance with the CFA Institute Global Investment Performance Standards (GIPS®) and manages both discretionary and non-discretionary accounts. When constructing a single composite for Fundamental, Juma Dzuya includes all discretionary, fee-paying accounts with both value and growth strategies. Does the composite constructed by Dzuya *most likely* meet GIPS criteria?
- A. Yes
 - B. No, because of non-similar investment strategies
 - C. No, because non-discretionary accounts are not included

Answer = B

“Introduction to the Global Investment Performance Standards (GIPS®),” CFA Institute
2012 Modular Level I, Vol. 1, p. 173
Study Session 1-3-b

Explain the construction and purpose of composites in performance reporting.

B is correct because a composite must include all actual, fee-paying, discretionary portfolios managed in accordance with the same investment mandate, objective, or strategy (Standards IV Composites).

By including both value and growth portfolios, the composite is made up of portfolios with different investment mandates or strategies.

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3. Adira Badawi, CFA, who owns a research and consulting company, is an independent board member of a leading cement manufacturer in a small local market. Because of Badawi's expertise in the cement industry, a foreign cement manufacturer looking to enter the local market has hired him to undertake a feasibility study. Under what circumstances can Badawi *most likely* undertake the assignment without violating the CFA Institute Code of Ethics and Standards of Professional Conduct? If he:
- A. makes full disclosure to both companies.
 - B. receives written permission from the local company.
 - C. signs confidentiality agreements with both companies.

Answer = A

"Guidance for Standards I–VII," CFA Institute

2012 Modular Level I, Vol. 1, pp. 123–125

Study Session 1-2-c

Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

A is correct because making full and fair disclosure of all matters that could reasonably be expected to impair one's independence and objectivity or interfere with respective duties to one's clients is required by Standard VI Conflicts of Interest of the CFA Institute Code of Ethics and Standards of Professional Conduct.

4. Noor Mawar, CFA, manages a trust fund with the beneficiary being an orphaned 18-year-old student. The investment policy dictates that trust assets are expected to provide the student with a stable low risk source of income until she reaches the age of 30 years. Based on information from an internet blog, the student asks Mawar to invest in a new business venture she expects will provide high returns over the next 5 years. Mawar ignores the request, instead securing conservative investments to provide sufficient income. Did Mawar *most likely* violate the CFA Institute Code of Ethics and Standards of Professional Conduct?
- A. Yes
 - B. No, because the client's objectives were met
 - C. No, because the investment time frame does not match the investment horizon

Answer = B

"Guidance for Standards I–VII," CFA Institute

2012 Modular Level I, Vol. 1, pp. 78–80

Study Session 1-2-b

Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

B is correct because the client is the trust/trustees, not the beneficiary. Mawar followed Standard III (C) Suitability by managing the trust assets in a way that would likely result in a

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stable source of income while keeping the risk profile low, thereby complying with the investment objectives of the trust.

5. Vishal Chandarana, an unemployed research analyst, recently registered for the CFA Level I exam. After two months of intense interviewing, he accepts a job with a stock brokerage company in a different region of the country. Chandarana posts on a social media blog how being a CFA candidate really helped him get a job. He also notes how relieved he was when his new employer didn't ask him about being fired from his former employer. Which CFA Institute Code of Ethics or Standards of Professional Conduct did Chandarana *least likely* violate?
- A. Misconduct
 - B. Loyalty to Employers
 - C. Reference to the CFA Program

Answer = C

"Guidance for Standards I–VII," CFA Institute
2012 Modular Level I, Vol. 1, pp. 46–47, 90–91, 144–146
Study Session 1-2-a, b

Demonstrate and explain the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity.
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

C is correct because there is no evidence Chandarana violated Standard VII (B) with regard to his being a CFA candidate. Specifically, Chandarana does not overstate his competency or imply he will achieve superior performance as a result of his CFA designation. It does appear Chandarana did not act with integrity when he hid information that could potentially harm his new employer's reputation, thus violating Standard I (D) Professionalism (Misconduct) and Standard IV (A) Duty to Employers (Loyalty).

6. Kam Bergeron, CFA, is an equity portfolio manager who often takes time off in the afternoon to play golf with important clients. Today, Bergeron is on the golf course when his game is interrupted by a phone call from his office. The call is from Bergeron's assistant, who notifies him of a steep and accelerating market decline. Bergeron, eager to get back to his golf game, tells his assistant to raise cash by selling 15% of all clients' holdings. Bergeron instructs his assistant to first sell the most liquid stocks in each client's portfolio and then do the same for his personal account. Bergeron is *least likely* to be in violation of which of the CFA Institute Standards of Professional Conduct?
- A. Suitability
 - B. Priority of transactions
 - C. Diligence and reasonable basis

Answer = B

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CFA Institute Standards

2012 Modular Level I, Vol. 1, pp. 78–79, 107–108, 131

Study Session 1-2-b

Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

B is correct, as there is no indication a violation of Standard VI (B) Priority of Transactions occurred. The Standard concerns transactions for clients having priority over employees' transactions and is not applicable in this case because the manager gives instructions to sell his personal holdings after those of his clients.

7. Ileana Inkster, CFA, was recently offered a senior management position within the trust department at a regional bank. The department is new, but the bank has plans to expand it significantly over the next few months. Inkster has been told she will be expected to help grow the client base of the trust department. She is informed the trust department plans to conduct educational seminars and pursue the attendees as new clients. Inkster notices recent seminar advertisements prepared by the bank's marketing department do not mention investment products will be for sale at the seminar. The ads indicate attendees can "learn how to immediately add \$100,000 to their net worth." What should Inkster *most likely* do to avoid violating any CFA Institute Standards of Professional Conduct?
- A. Decline to accept the new position
 - B. Accept the position and revise the marketing material
 - C. Accept the position and inform senior management of inadequate compliance procedures

Answer = A

CFA Institute Standards

2012 Modular Level I, Vol. 1, pp. 101–102

Study Session 1-2-c

Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

A is correct because the prospective supervisor's first step should be to not take the position. Accepting the position with inadequate procedures in place or improper marketing material would leave Inkster at risk of incurring a violation of the Code and Standards—Standard IV (C) Responsibilities of Supervisors. She could agree to be hired as an interim consultant with the bank in order to implement adequate procedures before taking on any supervisory role.

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8. Molly Burnett, CFA, is a portfolio manager for a fund that only invests in environmentally friendly companies. A multinational utility company recently acquired one of the fund's best performing investments, a wind power company. The wind power company's shareholders received utility company shares as part of the merger agreement. The utility has one of the worst environmental records in the industry, but its shares have been one of the top performers over the past 12 months. Because the utility pays a high dividend every three months, Burnett holds the utility shares until the remaining two dividends are paid for the year then sells the shares. Burnett *most likely* violated the CFA Institute Standard of Professional Conduct concerning:
- A. suitability.
 - B. disclosure of conflicts.
 - C. independence and objectivity.

Answer = A

CFA Institute Standards

2012 Modular Level I, Vol. 1, pp. 27–29, 78–81, 123–125

Study Session 1-2-b

Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

A is correct because the utility is not a suitable investment for a fund that only invests in companies with good environmental records. Continuing to hold this investment, therefore, was a violation of Standard III (C) Suitability.

9. Pia Nilsson is a sole proprietor investment advisor. The economic recession has reduced the number of clients she advises and caused revenues to decline. As a result, Nilsson has not paid her CFA Institute membership dues for the past two years. When a national financial publication recently interviewed Nilsson, she indicated that up until two years ago she had been a CFA charterholder and a CFA Institute member in good standing. In addition, she stated the completion of the CFA Program enhanced her portfolio management skills and enabled her to achieve superior returns on behalf of her clients. Which of Nilsson's following actions *most likely* violated the CFA Institute Standards of Professional Conduct?
- A. Nonpayment of CFA Institute membership dues
 - B. Attributing her superior returns to participation in the CFA Program
 - C. Indicating that being a CFA charterholder has enhanced her portfolio management skills

Answer = B

CFA Institute Standards

2012 Modular Level I, Vol. 1, pp. 144–145

Study Session 1-2-b

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B is correct because it is a violation of Standard VII (B) Responsibilities as a CFA Institute Member or CFA Candidate to claim the CFA charter helped her to achieve superior returns.

10. Which of the following distinct entities can *least likely* claim compliance with the Global Investment Performance Standards (GIPS)?
- A. A multi-national financial services holding company
 - B. An investment management division of a regional commercial bank
 - C. A locally incorporated subsidiary undertaking investment management services

Answer = A

“Global Investment Performance Standards (GIPS),” CFA Institute
2012 Modular Level I, Vol. 1, p. 184
Study Session 2-4-b

Describe the scope of the GIPS standards with respect to an investment firm’s definition and historical performance record.

A is correct because the Global Investment Performance Standards require that firms be defined as an investment firm, subsidiary, or division held out to clients or prospective clients as a distinct business entity (0.A.12). A multi-national financial services holding company is unlikely to be solely operating as an investment firm, and the scope of the business could also make it more difficult to claim compliance on a firm-wide basis.

11. For periods beginning on or after 1 January 2011, the aggregate fair value of total firm assets *most likely* includes all:
- A. fee-paying discretionary accounts.
 - B. fee- and non-fee-paying discretionary accounts.
 - C. fee- and non-fee-paying discretionary and non-discretionary accounts.

Answer = C

“Global Investment Performance Standards (GIPS),” CFA Institute
2012 Modular Level I, Vol. 1, p. 184
Study Session 2-4-a

Describe the key features of the GIPS standards and the fundamentals of compliance.

C is correct because for periods beginning on or after 1 January 2011, total firm assets must include the aggregate fair value of all discretionary and non-discretionary assets managed by the firm. This includes both fee-paying and non-fee-paying portfolios (0.A.13).

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12. In countries where new local laws relating to calculation and presentation of investment performance conflict with GIPS standards, firms who have claimed GIPS compliance should *most likely*:
- A. stop claiming GIPS compliance.
 - B. follow local laws, continue to claim GIPS compliance, and disclose conflicts.
 - C. continue to claim GIPS compliance, disclosing non-compliance with new laws.

Answer = B

“Global Investment Performance Standards (GIPS),” CFA Institute
2012 Modular Level I, Vol. 1, p. 180
Study Session 2-4-c

Explain how the GIPS standards are implemented in countries with existing standards for performance reporting, and describe the appropriate response when the GIPS standards and local regulations conflict.

B is correct because where local laws and regulations regarding calculation and presentation conflict with GIPS standards, firms must abide by the local laws and regulations. They are still allowed to claim GIPS compliance but must disclose areas where the local requirements conflict with those of the GIPS standards.

13. Firms claiming GIPS compliance must make every reasonable effort to provide a compliant presentation to which of the following?
- A. Existing clients
 - B. Prospective clients
 - C. Both existing and prospective clients

Answer = B

“Global Investment Performance Standards (GIPS),” CFA Institute
2012 Modular Level I, Vol. 1, p. 184
Study Session 2-4-a, d

Describe the key features of the GIPS standards and the fundamentals of compliance.
Describe the nine major sections of the GIPS standards.

B is correct because GIPS standards (0.A.9) state “firms must make every reasonable effort to provide a compliant presentation to all prospective clients. As long as a prospective client has received a compliant presentation within the previous 12 months, the firm has met this requirement. It is a GIPS recommendation, not a requirement, that all clients receive a compliant presentation on an annual basis (0.B.4).

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14. James Simone, CFA, the CFO of a publicly listed company, seeks to improve the quality of his company's communication with institutional fund managers. He holds an investor briefing with this group the evening before the company earnings are announced. The company's quarterly earnings are broadcast in a press release the next day before the market opens. The earnings information in the investor briefing is identical to that in the press release. Did Simone *most likely* violate the CFA Institute Standards of Professional Conduct?
- A. Yes
 - B. No, because investor briefing and press release information are identical
 - C. No, because the company releases information while the market is closed

Answer = A

"Guidance for Standards I–VII," CFA Institute

2012 Modular Level I, Vol. 1, pp. 49–51

Study Session 1-2-b

Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

A is correct because Simone violated Standard II (A) Material Nonpublic Information by giving institutional fund managers access to material nonpublic information prior to public dissemination (i.e., the press release). By releasing earnings results to a select group of institutional fund managers prior to a public press release, Simone allows the institutional fund managers a time advantage over other investors not invited to the investor briefing.

15. Beth Kozniak, a CFA candidate, is an independent licensed real estate broker and a well-known property investor. She is currently brokering the sale of a commercial property on behalf of a client in financial distress. If the client's building is not sold within 30 days, he will lose the building to the bank. A year earlier, another client of Kozniak's had expressed interest in purchasing this same property. However, she is unable to contact this client, nor has she discovered any other potential buyers. Given her distressed client's limited time frame, Kozniak purchases the property herself and foregoes any sales commission. Six months later, she sells the property for a nice profit to the client who had earlier expressed interest in the property. Does Kozniak *most likely* violate the CFA Institute Standards of Professional Conduct?
- A. No
 - B. Yes, she did not disclose her potential conflicts of interest to either client.
 - C. Yes, she profited on the real estate to the detriment of her financially stressed client.

Answer = A

"Guidance for Standards I–VII," CFA Institute

2012 Modular Level I, Vol. 1, pp. 63–64, 123–125

Study Session 1-2-a

Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

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A is correct because Kozniak does not appear to have violated any CFA Institute Standards of Professional Conduct. Because she is known in the market for investing and brokering property and both parties have worked with Kozniak in the past, both parties would know of her interests. In addition, in both cases she acts for her own account as a primary investor, not as a broker. She buys the property for her own portfolio and then sells the property from her own portfolio. Therefore, Kozniak did not violate Standard VI (A) Disclosure of Conflicts. When she purchased the property for her portfolio, she saved her client from losing the building to the bank and did not charge a sales commission. Because the sale of the property to her other client did not take place until six months after her purchase and she was unable to contact the client who had earlier expressed interest prior to her purchase, she cannot be accused of violating any loyalty, prudence, or care to either client (Standard III (A) Loyalty, Prudence, and Care).

16. Prudence Charmaine, a CFA charterholder, was recently accused in writing of cheating on a professional accounting exam. She denied cheating and successfully defended herself against the allegation. As part of her defense and as evidence of her character, Charmaine stated she is a CFA charterholder and upholds the CFA Institute Code of Ethics and Standards of Professional Conduct. On her next annual Professional Conduct Statement, Charmaine does not report this allegation to CFA Institute. Did Charmaine *most likely* violate the CFA Institute Code of Ethics or Standards of Professional Conduct?
- A. No
 - B. Yes, she improperly used the CFA Institute Code and Standards to defend herself.
 - C. Yes, she did not report the allegation on her annual Professional Conduct Statement.

Answer = C

“Code of Ethics and Standards of Professional Conduct,” CFA Institute
2012 Modular Level I, Vol. 1, pp. 8, 15, 18
Study Session 1-1-c

Explain the ethical responsibilities required by the Code and Standards, including the multiple sub-sections of each Standard.

C is correct because Charmaine should have reported the cheating allegation when making her annual Professional Conduct Statement. Even though she successfully defended herself against the charges and the charges were dropped, she has a responsibility to report the written complaint involving her integrity. The Code of Ethics requires CFA charterholders to practice and encourage others to practice in a professional and ethical manner that will reflect credit on themselves and the profession.

17. Margie Germaine, CFA, is a risk management consultant who has been asked by a small investment bank to recommend policies to prevent bank employees from front running client orders. These clients generally invest in one or more of the bank's large cap equity unit trusts. To ensure compliance with the CFA Institute Standards of Professional Conduct, Germaine should *least likely* recommend which of the following? Employees should be restricted from trading:
- A. equity related securities.
 - B. without prior permission.
 - C. during established time periods.

Answer = A

"Guidance for Standards I–VII," CFA Institute
2012 Modular Level I, Vol. 1, pp. 54, 131–134
Study Session 1-2-c

Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

A is correct because while Standard VI (B) Priority of Transactions is designed to prevent any potential conflict of interest or the appearance of a conflict of interest with respect to personal transactions, it does not ban employees from trading securities. A ban on all equity related securities could be excessively restrictive to employees and unnecessary if appropriate personal transaction policies and procedures are in place.

18. Johannes Meir, CFA, is a compliance officer for Family Estate Planning, LLC, a private-wealth consulting firm. Many of his colleagues have family members who have started their own retail businesses. Some of Meir's colleagues have been asked by relatives to serve as non-executive directors or advisors to their companies. Meir should *most likely* recommend which of the following policies to ensure compliance with the CFA Institute Standards?
- A. Prohibit employees from becoming directors or advisors
 - B. Require employees to declare all income sources annually
 - C. Require employees to declare all outside business interests

Answer = C

"Guidance for Standards I–VII," CFA Institute
2012 Modular Level I, Vol. 1, pp. 99, 123–125, 136
Study Session 1-2-c

Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

C is correct because the Standards require the disclosure of conflicts (Standard VI (A)). For Meir to understand what potential conflicts of interest employees may have with the firm and with their clients, he would need to know the outside interests of each staff member. The staff

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members themselves may not know enough about the company and its clients to disclose those interests that would present a potential conflict. Therefore, it may be best to have all employees declare their outside business interests on an annual basis so Meir can make the determination as to what outside business interests need to be disclosed to clients.

Questions 19 through 32 relate to Quantitative Methods

19. If the stated annual interest rate is 20% and the frequency of compounding is monthly, the effective annual rate (EAR) is *closest* to:
- A. 20%.
 - B. 21%.
 - C. 22%.

Answer = C

“The Time Value of Money,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 266–267

Study Session 2-5-c

Calculate and interpret the effective annual rate, given the stated annual interest rate and the frequency of compounding.

C is correct. The effective annual rate (EAR) is $(1 + \text{Periodic interest rate})^n - 1$. In this case, the periodic interest rate is $0.20/12 = 0.01667$ and the EAR is $(1.01667)^{12} - 1 = 0.21939 = 22\%$.

20. For a positively skewed unimodal distribution, which of the following measures is *most* accurately described as the largest?
- A. Mode
 - B. Mean
 - C. Median

Answer = B

“Statistical Concepts and Market Returns,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, p. 399

Study Session 2-7-j, k

Explain skewness and the meaning of a positively or negatively skewed return distribution.

Describe the relative locations of the mean, median, and mode for a unimodal, nonsymmetrical distribution.

B is correct. For the positively skewed unimodal distribution, the mode is less than the median, which is less than the mean.

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21. A project offers the following incremental after-tax cash flows:

Year	0	1	2	3	4	5	6
Cash flow (€)	-12,500	2,000	4,000	5,000	2,000	1,000	500

The IRR of the project is *closest* to:

- A. 2.4%.
- B. 4.4%.
- C. 5.5%.

Answer = C

“Discounted Cash Flow Applications,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 314–317

“Capital Budgeting,” John Stowe and Jacques R. Gagne

2012 Modular Level I, Vol. 4, pp. 11–13

Study Session 2-6-a, 11-36-d

Calculate and interpret the net present value (NPV) and the internal rate of return (IRR) of an investment.

Calculate and interpret the results using each of the following methods to evaluate a single capital project: net present value (NPV), internal rate of return (IRR), payback period, discounted payback period, and profitability index (PI).

C is correct. Enter the given cash flows into a financial calculator and solve for IRR.

$CF_0 = -12,500$, $CF_1 = 2,000$, $CF_2 = 4,000$, $CF_3 = 5,000$, $CF_4 = 2,000$, $CF_5 = 1,000$, and $CF_6 = 500$.

Compute i .

The IRR is 5.46867%.

Alternatively, find the NPV of the given cash flows using the three possible answers.

Rate	NPV
2.4%	€1,065.28
4.4%	€355.75
5.5%	-€10.20
5.5% is closest to 0 and is thus closest to the IRR of the project.	

22. Over a four-year period, a portfolio has returns of 10%, -2%, 18%, and -12%. The geometric mean return across the period is *closest* to:

- A. 2.9%.
- B. 3.5%.
- C. 8.1%.

Answer = A

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“Statistical Concepts and Market Returns,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 370–373

Study Session 2-7-e

Calculate and interpret measures of central tendency, including the population mean, sample mean, arithmetic mean, weighted average or mean (including a portfolio return viewed as a weighted mean), geometric mean, harmonic mean, median, and mode.

A is correct. The geometric mean return is calculated as
 $[(1 + 0.10) \times (1 - 0.02) \times (1 + 0.18) \times (1 - 0.12)]^{0.25} - 1 = 0.0286 \sim 2.9\%$.

23. The following sample of 10 items is selected from a population. The population variance is unknown.

10	20	-8	2	-9	5	0	-8	3	21
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The standard error of the sample mean is *closest* to:

- A. 3.4.
- B. 3.6.
- C. 10.8.

Answer = A

“Sampling and Estimation,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, p. 557

Study Session 3-10-f

Calculate and interpret the standard error of the sample mean.

A is correct. When the population variance is unknown, the standard error of the sample mean is calculated as

$$s_{\bar{X}} = \frac{s}{\sqrt{n}}$$

where s is the sample standard deviation and n is the size of the sample.

The sample standard deviation is

$$s = [\sum_{i=1}^n (X_i - \bar{X})^2 \div (n - 1)]^{0.5}.$$

In this problem, $\bar{X} = (10 + 20 - 8 + 2 - 9 + 5 + 0 - 8 + 3 + 21) \div 10 = 3.6$.

$s^2 = [(10 - 3.6)^2 + (20 - 3.6)^2 + (-8 - 3.6)^2 + (2 - 3.6)^2 + (-9 - 3.6)^2 + (5 - 3.6)^2 + (0 - 3.6)^2 + (-8 - 3.6)^2 + (3 - 3.6)^2 + (21 - 3.6)^2] \div 9 = 117.6$ and $s = 10.844$.

The standard error of the sample mean is, therefore, $10.844 \div 10^{0.5} = 3.429$.

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24. A subset of a population is *best* described as a:

- A. sample.
- B. statistic.
- C. conditional distribution.

Answer = A

“Statistical Concepts and Market Returns,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, p. 343

Study Session 2-7-a, b

Distinguish between descriptive statistics and inferential statistics, between a population and a sample, and among the types of measurement scales.

Define a parameter, a sample statistic, and a frequency distribution.

A is correct. A sample is a subset of a population.

25. An analyst collects data relating to five commonly used measures of use of debt (leverage) and interest coverage for a randomly chosen sample of 300 firms. The data comes from those firms' fiscal year 2011 annual reports. This data is *best* characterized as:

- A. time-series data.
- B. longitudinal data.
- C. cross-sectional data.

Answer = C

“Sampling and Estimation,” Richard A. Defusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 553–556

Study Session 3-10-d

Distinguish between time-series and cross-sectional data.

C is correct. Data on some characteristics of companies at a single point in time are cross-sectional data.

26. A financial contract offers to pay €1,200 per month for five years with the first payment made today. Assuming an annual discount rate of 6.5%, compounded monthly, the present value of the contract is *closest* to:

- A. €61,330.
- B. €61,663.
- C. €63,731.

Answer = B

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“The Time Value of Money,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 274–278

Study Session 2-5-d, e

Solve time value of money problems for different frequencies of compounding.

Calculate and interpret the future value (FV) and present value (PV) of a single sum of money, an ordinary annuity, an annuity due, a perpetuity (PV only), and a series of unequal cash flows.

B is correct. Enter the following into a financial calculator:

number of periods (5×12), $N = 60$; the discount rate, $I/Y = (6.5/12) = 0.54166667$; payment, $PMT = 1,200$.

Calculate the present value, PV, using “Begin” mode because this is an annuity due (the first payment is to be made immediately). The solution is 61,662.62.

Two alternate approaches are also available.

1) Find the PV of an ordinary annuity of 59 periods (60,462.62) and add 1,200 (the time zero first payment) to that value.

2) Find the PV of a 60-period ordinary annuity and multiply that value by one plus the monthly periodic interest rate (1.0054166667).

27. A two-tailed t -test of the null hypothesis that the population mean differs from zero has a p -value of 0.0275. Using a significance level of 5%, the *most* appropriate conclusion is:
- A. reject the null hypothesis.
 - B. accept the null hypothesis.
 - C. the chosen significance level is too high.

Answer = A

“Hypothesis Testing,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 599–600

Study Session 3-11-e

Explain and interpret the p -value as it relates to hypothesis testing.

A is correct. The p -value is the smallest level of significance at which the null hypothesis can be rejected. In this case, the given p -value is less than the given level of significance and we reject the null hypothesis.

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28. An analyst collects the following data related to paired observations for Sample A and Sample B. Assume that both samples are drawn from normally distributed populations and that the population variances are not known.

Paired Observation	Sample A Value	Sample B Value
1	25	18
2	12	9
3	-5	-8
4	6	3
5	-8	1

The t -statistic to test the hypothesis that the mean difference is equal to zero is *closest* to:

- A. 0.23.
- B. 0.27.
- C. 0.52.

Answer = C

“Hypothesis Testing,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 612–616

Study Session 3-11-h

Identify the appropriate test statistic and interpret the results for a hypothesis test concerning the mean difference of two normally distributed populations.

C is correct. First, calculate the mean difference:

$$\bar{d} = \frac{1}{n} \sum d_i$$

Then, calculate the sample variance and the standard error of the mean difference:

$$s_d^2 = \frac{\sum (d_i - \bar{d})^2}{n - 1}$$

$$s_{\bar{d}} = \frac{s_d}{\sqrt{n}}$$

Then, calculate the t -statistic:

$$t = \frac{\bar{d} - \mu_{d0}}{s_{\bar{d}}}$$

In this case, the mean difference is 1.4. The sample variance is 36.8. The standard error of the mean difference is 2.712932. The t -statistic is 0.51605.

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Paired Observation	Sample A Value	Sample B Value	Differences	Differences Minus the Mean Difference, Then Squared
1	25	18	7	$(7 - 1.4)^2 = 31.36$
2	12	9	3	$(3 - 1.4)^2 = 2.56$
3	-5	-8	3	$(3 - 1.4)^2 = 2.56$
4	6	3	3	$(3 - 1.4)^2 = 2.56$
5	-8	1	-9	$(-9 - 1.4)^2 = 108.16$
			Sum = 7 $7 \div 5 = \text{Mean of } 1.4$	Sum of squared differences = 147.2
			Sample variance:	$147.2 \div 4 = 36.8$
			Standard error:	$2.712932 = \sqrt{36.8} \div 5$
			t-Statistic:	$0.51605 = (1.4 - 0) \div 2.712932$

29. An investor deposits £2,000 into an account that pays continuously compounded interest of 6% (nominal annual rate). The value of the account at the end of four years is *closest* to:
- A. £2,525.
B. £2,542.
C. £2,854.

Answer = B

“The Time Value of Money,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

“Statistical Concepts and Market Returns,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 265–266, 524–525

Study Session 2-5-d, e, 3-9-p

Solve time value of money problems for different frequencies of compounding.

Calculate and interpret the future value (FV) and present value (PV) of a single sum of money, an ordinary annuity, an annuity due, a perpetuity (PV only), and a series of unequal cash flows.

Distinguish between discretely and continuously compounded rates of return, and calculate and interpret a continuously compounded rate of return, given a specific holding period return.

B is correct. The future value of a given lump sum, calculated using continuous compounding, is $FV = PV \times e^{rt}$. In this case, $2000 \times e^{.06 \times 4} = 2,542$.

30. A graphic depiction of a continuous distribution that shows the left tail to be longer than the right tail is *best* described as having:
- A. leptokurtosis.
B. positive skewness.
C. negative skewness.

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Answer = C

“Statistical Concepts and Market Returns,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, p. 401

Study Session 2-7-j

Explain skewness and the meaning of a positively or negatively skewed return distribution.

C is correct. A negatively skewed distribution appears as if the left tail has been pulled away from the mean.

31. When an analyst is unsure of the underlying population distribution, which of the following is *least* likely to increase the reliability of parameter estimates?

- A. Increase in the sample size
- B. Use of point estimates rather than confidence intervals
- C. Use of the t -distribution rather than the normal distribution to establish confidence intervals

Answer = B

“Sampling and Estimation,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, pp. 562–566

Study Session 3-10-h, i

Distinguish between a point estimate and a confidence interval estimate of a population parameter.

Describe the properties of Student’s t -distribution and calculate and interpret its degrees of freedom.

B is correct. Point estimates are not as reliable as confidence interval estimates. A conservative approach to confidence intervals relies on the t -distribution rather than the normal distribution, and use of the t -distribution will increase the reliability of the confidence interval. Increasing the sample size increases the reliability of the confidence interval.

32. Consider the following 20 items.

-41	-18	-17	-9	-8
-6	-5	3	3	3
5	5	7	7	11
12	20	21	21	61

The median value of the items is:

- A. 3.
- B. 4.
- C. 5.

Answer = B

“Statistical Concepts and Market Returns,” Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle

2012 Modular Level I, Vol. 1, p. 362

Study Session 2-7-e

Calculate and interpret measures of central tendency, including the population mean, sample mean, arithmetic mean, weighted average or mean (including a portfolio return viewed as a weighted mean), geometric mean, harmonic mean, median, and mode.

B is correct. “The median is the value of the middle item of a set of items. . . . In an even-numbered sample, we define the median as the mean of the values of items occupying the $n/2$ and $(n + 2)/2$ positions” (p. 362). The $n/2$ item is the 10th item, and the $(n + 2)/2$ item is the 11th item. The value of the 10th item is 3; the value of the 11th item is 5. The mean of 3 and 5 is 4.

Questions 33 through 44 relate to Economics

33. Demand for a good is *most likely* to be more elastic when:

- A. the good is a necessity.
- B. a lesser proportion of income is spent on the good.
- C. the adjustment to a price change takes a longer time.

Answer = C

“Demand and Supply Analysis: Introduction,” Richard V. Eastin and Gary L. Arbogast

2012 Modular Level I, Vol. 2, pp. 48–49

Study Session 4-13-m

Calculate and interpret price, income, and cross-price elasticities of demand, including factors that affect each measure.

C is correct. The longer the time that has elapsed since a price change, the more elastic demand is. For example, if gas prices rise, consumers cannot quickly change their mode of transportation

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but will likely do so in the longer run.

34. A local laundry and dry cleaner collects the following data on its workforce productivity. Workers always work in teams of two, and the laundry earns \$3.00 of revenue for each shirt laundered.

Quantity of Labor (L) (Workers)	Total Product (TP) (Shirts Laundered per Hour)
0	0
2	20
4	36
6	50
8	62

The marginal revenue product (\$ per worker) for hiring the fifth and sixth workers is *closest to*:

- A. 14.
- B. 21.
- C. 42.

Answer = B

“Demand and Supply Analysis: The Firm,” Gary L. Arbogast and Richard V. Eastin
2012 Modular Level I, Vol. 2, pp. 138, 144–145

Study Session 4-15-b, j, k

Calculate and interpret total, average, and marginal revenue.

Calculate and interpret total, marginal, and average product of labor.

Describe the phenomenon of diminishing marginal returns and calculate and interpret the profit-maximizing utilization level of an input.

B is correct. The marginal product (MP) is the amount of additional output resulting from using one more unit of input: $\Delta TP / \Delta L$, where ΔTP is the change in total product and ΔL is the change in total labor. The marginal revenue product (MRP) is the marginal product of an input times the price of the product: $MP \times \text{Price} = \Delta TP / \Delta L \times \text{Price}$.

In this problem, the marginal product of hiring the 5th and 6th workers ($\Delta L = 2$) is 14 shirts per hour/2 workers = 7 shirts per hour/worker. With each shirt resulting in \$3 of revenue, the MRP is 7 shirts per hour/worker \times \$3/shirt = \$21 per worker.

35. First degree price discrimination is *best* described as pricing that allows producers to increase their economic profit while consumer surplus:
- A. increases.
 - B. decreases.
 - C. is eliminated.

Answer = C

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“The Firm and Market Structures,” Richard G. Fritz and Michele Gambera

2012 Modular Level I, Vol. 2, pp. 196–197

Study Session 4-16-d, e

Describe and determine the profit-maximizing price and output for firms under each market structure.

Explain the effects of demand changes, entry and exit of firms, and other factors on long-run equilibrium under each market structure.

C is correct. In the first degree price discrimination, the entire consumer surplus is captured by the producer: The consumer surplus falls to zero.

36. Which of the following actions on the part of a central bank is *most* consistent with increasing the quantity of money?
- A. Increasing reserve requirements
 - B. Selling securities on the open market
 - C. Purchasing securities on the open market

Answer = C

“Monetary and Fiscal Policy,” Andrew Clare and Stephen Thomas

2012 Modular Level I, Vol. 2, pp. 378–379

Study Session 5-19-f, i

Describe the implementation of monetary policy.

Determine whether a monetary policy is expansionary or contractionary.

C is correct. When a central bank purchases securities, bank reserves increase. The banks thus have excess reserves and are able to increase their lending, increasing the money supply.

37. If a government increases its spending on domestically produced goods by an amount that is financed by the same increase in taxes, the aggregate demand will *most likely*:
- A. increase.
 - B. decrease.
 - C. remain unchanged.

Answer = A

“Monetary and Fiscal Policy,” Andrew Clare and Stephen Thomas

2012 Modular Level I, Vol. 2, pp. 410–411

Study Session 5-19-l, n, o

Describe the tools of fiscal policy, including their advantages and disadvantages.

Explain the implementation of fiscal policy and the difficulties of implementation.

Determine whether a fiscal policy is expansionary or contractionary.

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A is correct. Aggregate demand rises when the government increases spending by the same amount as it raises taxes because the marginal propensity to spend out of disposable income is less than 1, and hence for every dollar less in disposable income, spending only falls by c (where c is the marginal propensity to consume in dollars). Aggregate spending will fall less than the tax rise by a factor c . This additional output will, in turn, lead to further increases in income and output through the multiplier effect.

38. In early 2011, a New Zealand traveler returned from Singapore with SGD7,500 (Singapore dollars). A foreign exchange dealer provided the traveler with the following quotes:

Ratio	Spot Rates
USD/SGD	1.2600
NZD/USD	0.7670
USD: U.S. Dollar	

The amount of New Zealand dollars (NZD) that the traveler would receive for his Singapore dollars is *closest* to:

- A. 4,565.
- B. 7,248.
- C. 7,761.

Answer = B

“Currency Exchange Rates,” William A. Barker, Paul D. McNelis, and Jerry Nickelsburg
2012 Modular Level I, Vol. 2, pp. 521–525
Study Session 6-21-e
Calculate and interpret currency cross-rates.

B is correct. The NZD/SGD cross-rate is $\text{NZD/USD} \times \text{USD/SGD} = 0.7670 \times 1.26 = 0.9664$.
The traveler will receive 0.9664 NZD per SGD; $0.9664 \text{ NZD/SGD} \times 7,500 \text{ SGD} = 7,248 \text{ NZD}$.

39. In a simple economy with no foreign sector, the following equations apply:

Consumption function	$C = 2,500 + 0.80 \times (Y - T)$
Investment function	$I = 500 + 0.30 \times Y - 25 \times r$
Government spending	$G = 1,000$
Tax function	$T = -250 + 0.30 \times Y$
Y: Aggregate income r: Real interest rate	

If the real interest rate is 3% and government spending increases to 2,000, the increase in aggregate income will be *closest* to:

- A. 1,000.
- B. 1,163.
- C. 7,143.

Answer = C

“Aggregate Output, Prices, and Economic Growth,” Paul R. Kutasovic and Richard G. Fritz
 2012 Modular Level I, Vol. 2, pp. 232–240
 Study Session 5-17-f

Explain the IS and LM curves and how they combine to generate the aggregate demand curve.

C is correct.

<p>With no foreign sector, the GDP identity is $Y = C + I + G$. With substitution from the equations above, $Y = 2,500 + 0.80 \times (Y - T) + 500 + 0.30 \times Y - 25 \times r + 1,000$ $= 2,500 + 0.80 \times (Y + 250 - 0.30 \times Y) + 500 + 0.30 \times Y - 25 \times r + 1,000.$</p>
<p>$Y = 4,200 + 0.86 \times Y - 25 \times r.$ $Y = 30,000 - 178.6 \times r.$ At 3%, $Y = 30,000 - 178.6 \times 3 = 29,464.$ Alternatively, $Y - 0.86Y = 4,200 - 25 \times r$ $0.14Y = 4,200 - 25 \times r.$</p>
<p>If government spending increased by 1,000 to 2,000, then $Y = 5,200 + 0.86 \times Y - 25 \times r.$ $Y = 37,142 - 178.6 \times r$, which at 3% would be $Y = 37,142 - 178.6 \times 3 = 36,607.$ Representing an increase of $36,607 - 29,464 = 7,143.$</p> <p>Alternatively, at 5,200, $Y - 0.86Y = 5,200 - 25 \times r$ or $0.14 Y = 5,200 - 25 \times r.$ Or more simply, $\Delta G \div (1 - c) = 1,000 / (1 - 0.86) = 7,143.$</p>

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40. Which of the following measures of profit is *most likely* necessary for a firm to stay in business in the long run?
- A. Normal
 - B. Economic
 - C. Accounting

Answer = A

“Demand and Supply Analysis: The Firm,” Gary L. Arbogast and Richard V. Eastin
2012 Modular Level I, Vol. 2, pp. 101–105

Study Session 4-15-a

Calculate, interpret, and compare accounting profit, economic profit, normal profit, and economic rent.

A is correct. Normal profit is the level of accounting profit needed to just cover the implicit opportunity costs ignored in accounting costs. This is all that a firm needs to earn in the long run to remain in business. Failing to earn normal profits over the long run has a debilitating impact on the firm’s ability to access capital and to function properly as a business enterprise.

41. A small country has a comparative advantage in the production of pencils. The government establishes an export subsidy for pencils to promote economic growth. Which of the following will be the *most likely* result of this policy?
- A. As new domestic producers enter the pencils market, supply will increase and domestic prices will decline.
 - B. The increase in the domestic producer surplus will exceed the sum of the subsidy and the decrease in the domestic consumer surplus.
 - C. Although domestic producers will receive a net benefit, the policy will give rise to inefficiencies that cause a deadweight loss to the national welfare.

Answer = C

“International Trade and Capital Flows,” Usha Nair-Reichert and Daniel Robert Witschi
2012 Modular Level I, Vol. 2, pp. 456–457

Study Session 6-20-d

Compare types of trade and capital restrictions and their economic implications.

C is correct. Export subsidies interfere with the functioning of the free market and result in a deadweight loss to society. The deadweight loss arises on the producer side as the higher subsidized price causes inefficient producers to remain in the market; on the consumer side, the higher price causes those that would have purchased at the lower price to be shut out of the market.

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42. Assuming its trading partner does not retaliate, which of the following conditions *must* hold in order for a large country to increase its national welfare by imposing a tariff?
- A. It must have a comparative advantage in the production of the imported good.
 - B. The deadweight loss must be smaller than the benefit of its improving terms of trade.
 - C. It must auction the import licenses for a fee to offset the decline in the consumer surplus.

Answer = B

“International Trade and Capital Flows,” Usha Nair-Reichert and Daniel Robert Witschi
2012 Modular Level I, Vol. 2, pp. 452–456

Study Session 6-20-d

Compare types of trade and capital restrictions and their economic implications.

B is correct. The large country is able to cause the foreign exporter to reduce price in order to retain market share. In the large country, domestic producers gain from higher volume and the government gains from collecting the tariff. The sum of these two gains must exceed the deadweight loss to domestic consumers to achieve a national welfare gain. The change in terms of trade causes income redistribution from the foreign exporter to the domestic producer.

43. A country having a current account deficit *most likely* will still be able to consume more output than it produces by:
- A. increasing its net foreign liabilities.
 - B. restricting foreign direct investment.
 - C. adjusting interest rates to stimulate higher domestic savings.

Answer = A

“International Trade and Capital Flows,” Usha Nair-Reichert and Daniel Robert Witschi
2012 Modular Level I, Vol. 2, p. 475–476

“Currency Exchange Rates,” William A. Barker, Paul D. McNelis, and Jerry Nickelsburg
2012 Modular Level I, Vol. 2, p. 545

Study Session 6-20-f, 6-21-j

Describe the balance of payments accounts, including their components.

Explain the impact of exchange rates on countries’ international trade and capital flows.

A is correct. A current account deficit must be offset by a capital account surplus. Only by borrowing money from foreigners can a country have a current account deficit and consume more output than it produces (p. 475). An increase in net foreign liabilities is the result of borrowing from foreigners.

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44. In the classification of currency regimes, a currency board system (CBS) *most likely* differs from a fixed-rate parity system in that:
- A. a CBS has a discretionary target level of foreign exchange reserves.
 - B. a CBS can peg to a basket of currencies but a fixed-rate system cannot.
 - C. the monetary authority within a CBS does not act as a traditional lender of last resort.

Answer = C

“Currency Exchange Rates,” William A. Barker, Paul D. McNelis, and Jerry Nickelsburg
2012 Modular Level I, Vol. 2, pp. 539–540
Study Session 6-21-i
Describe exchange rate regimes.

C is correct. In a CBS, the monetary authority has an obligation to maintain 100% foreign currency reserves against the monetary base. It thus cannot lend to troubled financial institutions. As long as the country under a fixed-parity regime maintains its exchange peg, the central bank can serve as a lender of last resort.

Questions 45 through 68 relate to Financial Statement Analysis

45. Which of the following statements is *most* accurate about the responsibilities of an auditor for a publicly traded firm in the United States? The auditor:
- A. assures the reader that the financial statements are free from error, fraud, or illegal acts.
 - B. must express an opinion about the effectiveness of the company’s internal control systems.
 - C. must state that he prepared the financial statements according to generally accepted accounting principles.

Answer = B

“Financial Statement Analysis: An Introduction,” Elaine Henry and Thomas R. Robinson
2012 Modular Level I, Vol. 3, pp. 28–31
Study Session 7-22-d
Describe the objective of audits of financial statements, the types of audit reports, and the importance of effective internal controls.

B is correct. For a publicly traded firm in the United States, the auditor must express an opinion as to whether the company’s internal control system is in accordance with the Public Company Accounting Oversight Board, under the Sarbanes–Oxley Act. This is done either as a final paragraph in the auditor’s report or as a separate opinion.

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46. In accrual accounting, if an adjusting entry results in the reduction of an asset and the recording of an expense, the originating entry recorded was *most likely* a(n):

A. prepaid expense.
B. accrued expense.
C. deferred revenue.

Answer = A

“Financial Reporting Mechanics,” Thomas R. Robinson, Jan Hendrik van Greuning, Karen O’Connor Rubsam, Elaine Henry, and Michael A. Broihahn

2012 Modular Level I, Vol. 3, pp. 71–73

Study Session 7-23-d

Explain the need for accruals and other adjustments in preparing financial statements.

A is correct. The adjusting entry to record the expiry of a prepaid expense is the reduction of an asset (the prepaid) and the recognition of the expense.

47. At the beginning of the year, a company had total shareholders’ equity consisting of ¥200,000 in common share capital and ¥50,000 in retained earnings.

During the year, the following events occurred:

	¥
Net income reported	42,000
Dividends paid	7,000
Unrealized loss on available-for-sale investments	3,000
Repurchase of company stock, to be held as Treasury stock	6,000

The total shareholders’ equity at the end of the year is *closest* to:

A. ¥276,000.
B. ¥279,000.
C. ¥282,000.

Answer = A

“Understanding Balance Sheets,” Elaine Henry and Thomas R. Robinson

2012 Modular Level I, Vol. 3, pp. 241–244, 247–250

Study Session 8-26-e, f, g

Describe different types of assets and liabilities and the measurement bases of each.

Describe the components of shareholders’ equity.

Analyze balance sheets and statements of changes in equity.

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A is correct

Shareholders' Equity (¥)		
Start-of-year share capital		200,000
Less Treasury stock		(6,000)
Beginning retained earnings	50,000	
Plus net income	42,000	
Less dividends paid	(7,000)	
Ending retained earnings	85,000	85,000
Accumulated other comprehensive income		
Unrealized loss on available-for-sale investments		(3,000)
End-of-year shareholders' equity		<u>276,000</u>

48. Selected information from a company's comparative income statements and balance sheets is presented below.

**Selected Income Statement Data
for the year ended August 31st
(US\$ thousands)**

	<u>2011</u>	<u>2010</u>
Sales revenue	\$100,000	\$ 95,000
Cost of goods sold	47,000	47,500
Depreciation expense	4,000	3,500
Net income	\$ 11,122	\$ 4,556

**Selected Balance Sheet Data
as of August 31st
(US\$ thousands)**

	<u>2011</u>	<u>2010</u>
Current Assets		
Cash & investments	\$ 21,122	\$ 25,000
Accounts receivable	25,000	13,500
Inventories	<u>13,000</u>	<u>8,500</u>
Total current assets	\$ 59,122	\$ 47,000
Current Liabilities		
Accounts payable	\$ 15,000	\$ 15,000
Other current liabilities	<u>7,000</u>	<u>9,000</u>
Total current liabilities	\$ 22,000	\$ 24,000

The cash collected from customers in 2011 is *closest* to:

- A. \$88,500.
- B. \$96,100.
- C. \$111,500.

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Answer = A

“Understanding Cash Flow Statements,” Elaine Henry, Thomas R. Robinson, Jan Hendrik van Greuning, and Michael A. Broihahn

2012 Modular Level I, Vol. 3, pp. 291–292

Study Session 8-27-e, f

Describe how the cash flow statement is linked to the income statement and the balance sheet. Describe the steps in the preparation of direct and indirect cash flow statements, including how cash flows can be computed using income statement and balance sheet data.

A is correct. Cash collected from customers = Revenues – Increase in accounts receivable = \$100 – (25 – 13.5) = 88.5.

49. Selected information for a company and the common size data for its industry are provided below.

	Company (£)	Common Size Industry Data (% of sales)
EBIT	76,000	28.0
Pretax profit	66,400	19.6
Net income	44,500	13.1
Sales	400,000	100.0
Total assets	524,488	140.0
Total equity	296,488	74.0
ROE	15.0%	17.7%

Which of the following is *most likely* a contributor to the company’s inferior ROE compared to that of the industry? The company’s:

- A. tax burden ratio.
- B. interest burden ratio.
- C. financial leverage ratio.

Answer = C

“Financial Analysis Techniques,” Elaine Henry, Thomas R. Robinson, and Jan Hendrik van Greuning

2012 Modular Level I, Vol. 3, pp. 374–379

Study Session 8-28-c, d,

“Financial Statement Analysis,” Pamela Peterson Drake

2012 Modular Level I, Vol. 4, pp. 213–215

Study Session 11-41

Describe the relationships among ratios and evaluate a company using ratio analysis.

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Demonstrate the application of the DuPont analysis of the return on equity, and calculate and interpret the effect of changes in its components.

C is correct.

	Calculation	Company	Industry
Tax burden ratio	Net Inc/EBT	44,500/66,400 = 0.67	13.1/19.6 = 0.67
Financial leverage	Total assets/Equity	524,488/296,488 = 1.77	140/74 = 1.89
Interest burden ratio	EBT/EBIT	66,400/76,000 = 0.87	19.6/28.0 = 0.70
The company has a lower financial leverage ratio relative to the industry, which is one of the causes of the company's lower relative ROE performance. The tax burden ratio is the same as the industry and the interest burden ratio is higher, which would increase ROE.			
EBT: Pretax profit (earnings before tax) Net Inc: Net income			

50. Which of the following is *least likely* to be a general feature underlying the preparation of financial statements within the IFRS Conceptual Framework?

- A. Matching
- B. Materiality
- C. Accrual basis

Answer = A

"Financial Reporting Standards," Elaine Henry, Jan Hendrik van Greuning, and Thomas R. Robinson

2012 Modular Level I, Vol. 3, pp. 128–129

"Understanding Income Statements," Elaine Henry and Thomas R. Robinson

2012 Modular Level I, Vol. 3, p. 171

Study Session 7-24-e, 8-25-d

Describe general requirements for financial statements under IFRS.

Describe the general principles of expense recognition, specific expense recognition applications, and the implications of expense recognition choices for financial analysis.

A is correct. The IFRS Conceptual Framework specifies a number of general features underlying the preparation of financial statements, including materiality and accrual basis. Matching is not one of those general features; it is a general principle of expense recognition.

51. A company suffered a substantial loss when its production facility was destroyed in an earthquake against which it was not insured. Geological scientists were surprised by the earthquake as there was no evidence that one had ever occurred in that area in the past. Which of the following statements is *most* accurate? The company should report the loss on its income statement:
- A. net of taxes if it reports under U.S. GAAP.
 - B. as an extraordinary item if it reports under IFRS.
 - C. as an unusual item if it reports under U.S. GAAP.

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Answer = A

“Understanding Income Statements,” Elaine Henry and Thomas R. Robinson

2012 Modular Level I, Vol. 3, pp. 182–183

Study Session 8-25-e

Describe the financial reporting treatment and analysis of non-recurring items (including discontinued operations, extraordinary items, and unusual or infrequent items) and changes in accounting standards.

A is correct. To qualify as an extraordinary item, an item must be both unusual in nature and infrequent in occurrence: The description of the earthquake meets these criteria. Extraordinary items are only allowed under U.S. GAAP and are reported on the income statement net of tax.

52. The following information is available about a company:

(all figures in \$ thousands)	2011	2010
Deferred tax assets	200	160
Deferred tax liabilities	(450)	(360)
Net deferred tax liabilities	(250)	(200)
Earnings before taxes	4,000	3,800
Income taxes at the statutory rate	1,200	1,140
Current income tax expense	1,000	900

The company's 2011 income tax expense (in thousands) is *closest* to:

- A. \$1,000.
- B. \$1,050.
- C. \$1,250.

Answer = B

“Income Taxes,” Elbie Antonites and Michael A. Broihahn

2012 Modular Level I, Vol. 3, pp. 491–493, 512–517

Study Session 9-31-d, i

Calculate income tax expense, income taxes payable, deferred tax assets, and deferred tax liabilities, and calculate and interpret the adjustment to the financial statements related to a change in the income tax rate.

Analyze disclosures relating to deferred tax items and the effective tax rate reconciliation, and explain how information included in these disclosures affects a company's financial statements and financial ratios.

B is correct. Income tax expense reported on the income statement = Income tax payable + Net changes in the deferred tax assets and deferred tax liabilities. The change in the net deferred tax liability is a \$50 increase (indicating that the income tax expense is \$50 in excess of the income

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tax payable [or current income tax expense] and representing an increase in the expense).
Therefore, the income tax expense = $1,000 + 50 = 1,050$.

53. Which of the following inventory valuation methods *best* matches the actual historical cost of the inventory items to their physical flow?
- A. FIFO
 - B. LIFO
 - C. Specific identification

Answer = C

“Inventories,” Michael A. Broihahn
2012 Modular Level I, Vol. 3, p. 411
Study Session 9-29-b

Describe different inventory valuation methods (cost formulas).

C is correct. Specific identification best matches the physical flow of the inventory items because it tracks the actual units that are sold.

54. A company has announced that it is going to distribute a group of long-lived assets to its owners in a spin-off. The *most* appropriate way to account for the assets until the distribution occurs is to classify them as:
- A. held for sale with no depreciation taken.
 - B. held for use until disposal with no depreciation taken.
 - C. held for use until disposal with depreciation continuing to be taken.

Answer = C

“Long-Lived Assets,” Elaine Henry and Elizabeth A. Gordon
2012 Modular Level I, Vol. 3, pp. 467, 480
Study Session 9-30-i

Explain the derecognition of property, plant and equipment, and intangible assets.

C is correct. Long-lived assets that will be disposed of other than by sale, such as a spin-off, an exchange for other assets, or abandonment, are classified as held for use until disposal and continue to be depreciated until that time.

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55. The following information is available from a company's 2011 financial statements:

Note 6: Employee costs

(in thousands)	2011	2010
Wages and salaries	\$21,000	\$18,500
Share-based payment costs	600	425
Defined contribution pension plan	1,525	1,462
Retirement benefit obligations (note 17)	728	620
Other employee costs	<u>3,233</u>	<u>3,080</u>
Total employee costs	\$27,086	\$24,087

Note 17: Retirement benefit obligations

Amounts recognized in the income statement for the year

(in thousands)	2011	2010
Current service cost	\$ 692	\$ 588
Interest cost on pension obligation	80	65
Expected return on plan assets	(50)	(45)
Past service costs recognized in the year	<u>6</u>	<u>12</u>
Total income statement charge	\$ 728	\$ 620

The pension expense (in thousands) reported in 2011 is *closest* to:

- A. \$1,525.
- B. \$2,217.
- C. \$2,253.

Answer = C

"Non-Current (Long-Term) Liabilities," Elizabeth A. Gordon and Elaine Henry
2012 Modular Level I, Vol. 3, pp. 570–573

Study Session 9-32-j, k

Describe defined contribution and defined benefit pension plans.

Compare the presentation and disclosure of defined contribution and defined benefit pension plans.

C is correct. The pension expense would be the sum of the expense for the defined contribution plan and the defined benefit plan (retirement benefit obligation): $1,525 + 728 = 2,253$.

56. An analyst is assessing a company's quality of earnings by looking at the cash flow earnings index (operating cash flow divided by net income). Potential problems would *most likely* be indicated if the ratio were consistently:
- A. equal to 1.0.
 - B. less than 1.0.
 - C. greater than 1.0.

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Answer = B

“Financial Reporting Quality: Red Flags and Accounting Warning Signs,” Thomas R. Robinson and Paul Munter

2012 Modular Level I, Vol. 3, p. 594

Study Session 10-33-d

Describe common accounting warning signs and methods for detecting each.

B is correct. A cash flow earnings index consistently below 1.0 could indicate potential problems in a company’s quality of earnings.

57. A retail company that leases the majority of its space has:

- total assets of \$4,500 million,
- total long-term debt of \$2,125 million, and
- average interest rate on debt of 12%.

Note 8 to the 2011 financial statements contains the following information about the company’s future beginning of year lease commitments:

Note 8: Operating leases

Year	Millions
2012	\$ 200
2013	200
2014	200
2015	200
2016	200
Total	\$ 1,000

After adjustment for the off-balance-sheet financing, the debt-to-total-assets ratio for the company is *closest* to:

- A. 55%.
- B. 57%.
- C. 65%.

Answer = A

“Non-Current (Long-Term) Liabilities,” Elizabeth A. Gordon and Elaine Henry

2012 Modular Level I, Vol. 3, p. 574

“Financial Statement Analysis: Applications,” Thomas R. Robinson, Jan Hendrik van Greuning, Elaine Henry, and Michael A. Broihahn

2012 Modular Level I, Vol. 3, pp. 652–658

Study Session 9-32-I, 10-35-e

Calculate and interpret leverage and coverage ratios.

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Explain appropriate analyst adjustments to a company's financial statements to facilitate comparison with another company.

A is correct. The present value of the operating leases should be added to both the total debt and the total assets.

The present value of an annuity due of \$200 for 5 years at 12% = \$807.5.

(N = 5; I = 12; PMT = 200; Mode = Begin)

Adjusted debt to total assets = $(2,125 + 807.5) \div (4,500 + 807.5) = 55.3\%$.

58. The financial statement that would be *most* helpful to an analyst in understanding the changes that have occurred in a company's retained earnings over a year is the statement of:

- A. changes in equity.
- B. financial position.
- C. comprehensive income.

Answer = A

"Financial Statement Analysis: An Introduction," Elaine Henry and Thomas R. Robinson

2012 Modular Level I, Vol. 3, pp. 21–22

Study Session 7-22-b

Describe the roles of the key financial statements (statement of financial position, statement of comprehensive income, statement of changes in equity, and statement of cash flows) in evaluating a company's performance and position.

A is correct. The statement of changes in equity reports the changes in the components of shareholders' equity over the year, which would include the retained earnings account.

59. Under the IASB Conceptual Framework, one of the qualitative characteristics of useful financial information is that different knowledgeable users would agree that the information is a faithful representation of the economic events that it is intended to represent. This characteristic is *best* described as:
- A. verifiability.
 - B. comparability.
 - C. understandability.

Answer = A

"Financial Reporting Standards," Elaine Henry, Jan Hendrik van Greuning, and Thomas R.

Robinson

2012 Modular Level I, Vol. 3, p. 123

Study Session 7-24-d

Describe the International Accounting Standards Board's Conceptual Framework, including the objective and qualitative characteristics of financial statements, required reporting elements, and constraints and assumptions in preparing financial statements.

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A is correct. Under the International Accounting Standards Board's Conceptual Framework, verifiability is the qualitative characteristic that means that different knowledgeable and independent users would agree that the information presented faithfully represents the economic events that it is intended to represent.

60. Under U.S. GAAP, interest paid is *most likely* included in which of the following cash flow activities?
- A. Operating only
 - B. Financing only
 - C. Either operating or financing

Answer = A

"Understanding Cash Flow Statements," Elaine Henry, Thomas R. Robinson, Jan Hendrik van Greuning, and Michael A. Broihahn

2012 Modular Level I, Vol. 3, pp. 273–276

Study Session 8-27-a, c

Compare cash flows from operating, investing, and financing activities, and classify cash flow items as relating to one of those three categories given a description of the items.

Contrast cash flow statements prepared under International Financial Reporting Standards (IFRS) and U.S generally accepted accounting principles (U.S. GAAP).

A is correct. Interest paid must be categorized as an operating cash flow activity under U.S. GAAP, although it can be categorized as either an operating or financing cash flow activity under IFRS.

61. The following information is available:

Income Statement Items	(\$)
Sales	421,000
Cost of goods sold (COGS)	315,000
Balance Sheet Items	
Cash	30,000
Accounts receivable	40,000
Inventories	36,000
Accounts payable	33,000

The company's cash conversion cycle (in days) is *closest* to:

- A. 38.2.
- B. 45.2.
- C. 76.4.

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Answer = A

“Financial Analysis Techniques,” Elaine Henry, Thomas R. Robinson, and Jan Hendrik van Greuning

2012 Modular Level I, Vol. 3, pp. 351–352, 356, 359–362

“Working Capital Management,” Edgar A. Norton, Jr., Kenneth L. Parkinson, and Pamela Peterson Drake

2012 Modular Level I, Vol. 4, pp. 163–167

Study Session 8-28-b, 11-40-c

Classify, calculate, and interpret activity, liquidity, solvency, profitability, and valuation ratios.

Evaluate working capital effectiveness of a company, based on its operating and cash conversion cycles, and compare the company’s effectiveness with that of peer companies.

A is correct.

Cash conversion cycle = DOH + DSO – Days of payables			
	Formula	Calculation	Days
DOH: Days of inventory on hand	$\frac{365}{\text{Inventory turnover}}$	$\frac{365}{8.75}$	41.7
Inventory turnover = $\frac{\text{COGS}}{\text{Inventory}}$	$\frac{315,000}{36,000} = 8.75$		
DSO: Days of sales outstanding	$\frac{365}{\text{Receivables turnover}}$	$\frac{365}{10.53}$	34.7
Receivables turnover = $\frac{\text{Sales}}{\text{Accts receivable}}$	$\frac{421,000}{40,000} = 10.53$		
Number of days of payables:	$\frac{365}{\text{Payables turnover}}$	$\frac{365}{9.55}$	–38.2
Payables turnover = $\frac{\text{COGS} *}{\text{Accts payable}}$	$\frac{315,000}{33,000} = 9.55$		
* When purchases are not available (as in this case), the COGS can be used to estimate payables turnover (p. 356).			
Cash conversion cycle			38.2

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62. An analyst has calculated the following ratios for a company:

Operating Profit Margin	17.5%
Net Profit Margin	11.7%
Total Asset Turnover	0.89 times
Return on Assets	10.4%
Financial Leverage	1.46
Debt to Equity	0.46

The company's return on equity (ROE) is *closest* to:

- A. 4.8%.
- B. 15.2%.
- C. 22.7%.

Answer = B

"Financial Analysis Techniques," Elaine Henry, Thomas R. Robinson, and Jan Hendrik van Greuning

2012 Modular Level I, Vol. 3, pp. 374–375

Study Session 8-28-d

Demonstrate the application of the DuPont analysis of return on equity, and calculate and interpret the effects of changes in its components.

B is correct. Using DuPont analysis, there are two ways to calculate ROE from the information provided:

ROE = Net profit margin × Asset turnover × Financial leverage	$11.7 \times 0.89 \times 1.46$	15.2
ROE = ROA × Financial leverage	10.4×1.46	15.2

63. According to International Financial Reporting Standards, which of the following conditions *should* be satisfied in order to report revenue on the income statement?

- A. Payment has been received.
- B. Costs can be reliably measured.
- C. Goods have been delivered to the customer.

Answer = B

"Understanding Income Statements," Elaine Henry and Thomas R. Robinson

2012 Modular Level I, Vol. 3, pp. 158–159

Study Session 8-25-b

Describe the general principles of revenue recognition and accrual accounting, specific revenue recognition applications (including accounting for long-term contracts, installment sales, barter transactions, and gross and net reporting of revenue), and the implications of revenue recognition principles for financial analysis.

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B is correct. The IFRS conditions that should be met include that the costs incurred can be reliably measured, and it is likely that the economic benefits will flow to the entity, not the actual receipt of any payment, and that the significant risks and rewards of ownership have been transferred, which is normally when the goods have been delivered, but not always.

64. A company entered into a three-year construction project with a total contract price of \$10.6 million and an expected total cost of \$8.8 million. The following table provides cash flow information relating to the contract:

All figures in millions	Year 1	Year 2	Year 3
Costs incurred and paid	\$1.2	\$6.0	\$1.6
Amounts billed and payments received	\$2.4	\$5.6	\$2.6

If the company uses the percentage-of-completion method, the amount of revenue recognized (in millions) in Year 2 is *closest* to:

- A. \$3.5.
- B. \$5.6.
- C. \$7.2.

Answer = C

“Understanding Income Statements,” Elaine Henry and Thomas R. Robinson

2012 Modular Level I, Vol. 3, pp. 162–164

Study Session 8-25-b

Describe the general principles of revenue recognition and accrual accounting, specific revenue recognition applications (including accounting for long-term contracts, installment sales, barter transactions, and gross and net reporting of revenue), and the implications of revenue recognition principles for financial analysis.

C is correct. The revenue reported is equal to the percentage of the contract that is completed in that period, where percentage completion is based on costs.

In Year 2: $(6.0 \div 8.8) \times 10.6 = 7.2$.

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65. A company recently purchased a warehouse property and related equipment (shelving, forklifts, etc.) for €50 million, which were valued by an appraiser as follows: Land €10 million, building €35 million, and equipment €5 million. The company incurred the following additional costs in getting the warehouse ready to use:

- €2.0 million for repairs to the building's roof and windows
- €0.5 million to modify the interior layout to meet their needs (moving walls and doors, inserting and removing partitions, etc.)
- €0.1 million on an orientation and training session for employees to familiarize them with the facility

The cost to be capitalized to the building account (in millions) for accounting purposes is *closest* to:

- A. €37.0.
- B. €37.5.
- C. €38.5.

Answer = B

"Long-Lived Assets," Elaine Henry and Elizabeth A. Gordon
2012 Modular Level I, Vol. 3, pp. 444–446

Study Session 9-30-a

Distinguish between costs that are capitalized and costs that are expensed in the period in which they are incurred.

B is correct. The capitalized cost of the building would include the other costs that are directly attributable to the building and are involved in extending its life or getting it ready to use:

Initial cost	€35.00
Repairs to roof and windows	2.00
Modifications to interiors	<u>0.50</u>
Total cost	€37.5 million

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66. On 1 January 2009, a company that prepares its financial statements according to IFRS issued bonds with the following features:

- Face value £20,000,000
- Term 5 years
- Coupon rate 6% paid annually on December 31
- Market rate at issue 4%

The company did not elect to carry the bonds at fair value. In December 2011 the market rate on similar bonds had increased to 5% and the company decided to buy back (retire) the bonds after the coupon payment on December 31. As a result, the gain on retirement reported on the 2011 statement of income is *closest* to:

- A. £340,410.
- B. £371,882.
- C. £382,556.

Answer = C

“Non-Current (Long-Term) Liabilities,” Elizabeth A. Gordon and Elaine Henry
2012 Modular Level I, Vol. 3, pp. 537, 539–540, 544
Study Session 9-32-c
Explain the derecognition of debt.

C is correct.

Gain =	Book value of debt – Market value	both at time of retirement, calculations
	$20,754,438 - 20,371,882 = \mathbf{382,556}$	below

The market value of debt at retirement can be determined by discounting the future cash flows at the current market rate (5%) using a financial calculator:

$FV = 20,000,000$; $i = 5\%$; $PMT = 1,200,000$; $N = 2$; Compute $PV = 20,371,882$

The book value after the third interest payment (two payments remaining) can be found either using a financial calculator and the market rate at the time of issue (4%) or an amortization table (shown below).

$FV = 20,000,000$; $i = 4\%$; $PMT = 1,200,000$; $N = 2$; Compute $PV = 20,754,438$.

The bond's initial value (required for amortization) can be found using a financial calculator:

FV = 20,000,000; i = 4%; PMT = 1,200,000; N = 5; Compute PV = 21,780,729.

	Principal value at beginning of year	Interest expense 4%	Coupon 6%	Discount amortization
2009	21,780,729	871,229	1,200,000	328,771
2010	21,451,958	858,078	1,200,000	341,922
2011	21,110,036	844,401	1,200,000	355,599
Book value at end of 2011	20,754,438			

67. Providing information about the performance of a company, its financial position, and changes in financial position that is useful to a wide range of users is *most* accurately described as the role of:

- A. financial reporting.
- B. the auditor's report.
- C. financial statement analysis.

Answer = A

"Financial Statement Analysis: An Introduction," Elaine Henry and Thomas R. Robinson
2012 Modular Level I, Vol. 3, pp. 6–7, 28–29
Study Session 7-22-a, d

Describe the roles of financial reporting and financial statement analysis.

Describe the objective of audits of financial statements, the types of audit reports, and the importance of effective internal controls.

A is correct. The role of financial reporting is to provide information about the performance of a company, its financial position, and changes in financial position that is useful to a wide range of users in making economic decisions.

68. Which of the following is *most likely* a reason that a lessor can offer attractive lease terms and lower cost financing to a lessee? Because the:

- A. lessor retains the tax benefits of ownership.
- B. lessor avoids reporting the liability on its balance sheet.
- C. lessee is better able to resell the asset at the end of the lease.

Answer = A

"Non-Current (Long-Term) Liabilities," Elizabeth A. Gordon and Elaine Henry
2012 Modular Level I, Vol. 3, pp. 551–552
Study Session 9-32-f

Explain the motivations for leasing assets instead of purchasing them.

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A is correct. The lessor often retains the tax benefits of ownership of the leased asset, which allows the lessor to pass those savings along to the lessee in the form of lower financing costs or other attractive terms.

Questions 69 through 78 relate to Corporate Finance

69. When computing the cash flows for a capital project, which of the following is *least likely* to be included?
- A. Tax effects
 - B. Financing costs
 - C. Opportunity costs

Answer = B

“Capital Budgeting,” John D. Stowe and Jacques R. Gagne

2012 Modular Level I, Vol. 4, p. 8

Study Session 11-36-b

Describe the basic principles of capital budgeting, including cash flow estimation.

B is correct. Financing costs are not included in a cash flow calculation but are considered in the calculation of the discount rate.

70. A company has an equity beta of 1.4 and is 60% funded with debt. Assuming a tax rate of 35%, the company's asset beta is *closest* to:
- A. 0.71.
 - B. 0.98.
 - C. 1.01.

Answer = A

“Cost of Capital,” Yves Courtois, Gene C. Lai, and Pamela Peterson Drake

2012 Modular Level I, Vol. 4, pp. 60–61

Study Session 11-37-i

Calculate and interpret the beta and cost of capital for a project.

A is correct. Note: 60% debt financing is equivalent to a D/E ratio of $1.50 = 0.60 / (1 - 0.60)$.

$$\beta_{Asset} = \beta_{EQ} \times [1 \div (1 + [(1 - t) D/E])] = 1.4 \div (1 + (1 - 0.35) \times 1.5) = 0.7089.$$

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71. A company's taxable income is 17.1% of sales. Assuming taxes of 42% and a dividend payout of 50%, the net profit margin is *closest* to:

A. 5.0%.
B. 7.2%.
C. 9.9%.

Answer = C

"Financial Statement Analysis," Pamela Peterson Drake

2012 Modular Level I, Vol. 4, pp. 217–225

Study Session 11-41

The candidate should be able to demonstrate the use of pro forma income and balance sheet statements.

C is correct.

$$\begin{aligned}\text{Net profit margin} &= \text{Net income} \div \text{Sales} = [\text{Earnings before tax} \times (1 - \text{Tax rate})] \div \text{Sales} \\ &= \frac{(0.171 \times \text{Sales}) \times (1 - 0.42)}{\text{Sales}} \\ &= 0.171 \times (1 - 0.42) = 9.92\%.\end{aligned}$$

72. A project has the following annual cash flows:

Year 0	Year 1	Year 2	Year 3	Year 4
–\$75,000	\$21,600	\$23,328	\$37,791	\$40,815

With a discount rate of 8%, the discounted payback period (in years) is *closest* to:

A. 2.8.
B. 3.0.
C. 3.2.

Answer = C

"Capital Budgeting," John D. Stowe and Jacques R. Gagne

2012 Modular Level I, Vol. 4, p. 15

Study Session 11-36-d

Calculate and interpret the results using each of the following methods to evaluate a single capital project: net present value (NPV), internal rate of return (IRR), payback period, discounted payback period, and profitability index (PI).

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C is correct.

Year	Cash Flow	PV (Cash Flow) @ 8% $CF_n \div (1.08)^n$	Amount to Pay Back [$CF_0 - \text{Cumulative PV cash flows}$]
0	-75,000	-75,000	75,000
1	21,600	20,000	55,000
2	23,328 *	20,000	35,000
3	37,791	30,000	5,000
4	40,814	30,000	
The first three cash flows recover \$70,000 (in present value terms) of the cost, making only \$5,000 of the \$30,000 in Year 4 necessary to completely recover the cost. Therefore, the discounted payback is 3.2 years.			
* For example, the PV of Year 2's cash flow is $\$23,328 \div [1.08]^2$.			

73. Using the company's income statement presented, its degree of operating leverage is *closest* to:

Income Statement	\$ millions
Revenues	9.8
Variable Operating Costs	7.2
Fixed Operating Costs	1.5
Operating Income	1.1
Interest	0.6
Taxable Income	0.5
Tax	0.2
Net Income	0.3

- A. 1.1.
- B. 1.7.
- C. 2.4.

Answer = C

"Measures of Leverage," Pamela Peterson Drake, Raj Aggarwal, Cynthia Harrington, and Adam Kobor

2012 Modular Level I, Vol. 4, pp. 97–99

Study Session 11-38-b

Calculate and interpret the degree of operating leverage, the degree of financial leverage, and the degree of total leverage.

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C is correct.

$$\begin{aligned} \text{DOL} &= \frac{(\text{Revenues} - \text{Variable operating costs})}{(\text{Revenues} - \text{Variable operating costs} - \text{Fixed operating costs})} \\ &= \frac{9.8 - 7.2}{9.8 - 7.2 - 1.5} \\ &= 2.36. \end{aligned}$$

74. Based on best practices in corporate governance procedures, it is *most* appropriate for a company's compensation committee to:

- A. include a retired executive from the firm.
- B. link compensation with long-term objectives.
- C. include a representative from the firm's external auditor.

Answer = B

"The Corporate Governance of Listed Companies: A Manual for Investors," Kurt Schacht, James C. Allen, and Matthew Orsagh

2012 Modular Level I, Vol. 4, pp. 250–253

Study Session 11-42-e

Describe the responsibilities of the audit, compensation, and nominations committees and identify factors an investor should consider when evaluating the quality of each committee.

B is correct. Under appropriate corporate governance procedures, the compensation committee should link compensation with long-term objectives.

75. The following information is available for a company:

- Bonds are priced at par and they have an annual coupon rate of 9.2%
- Preferred stock is priced at \$8.18 and it pays an annual dividend of \$1.35
- Common equity has a beta of 1.3
- The risk-free rate is 4% and the market premium is 11%
- Capital structure: Debt = 30%; Preferred stock = 15%; Common equity = 55%
- The tax rate is 35%

The weighted average cost of capital (WACC) for the company is *closest* to:

- A. 11.5%.
- B. 13.4%.
- C. 14.3%.

Answer = C

"Cost of Capital," Yves Courtois, Gene C. Lai, and Pamela Peterson Drake

2012 Modular Level I, Vol. 4, pp. 41, 47–52

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“Portfolio Risk and Return: Part II,” Vijay Singal

2012 Modular Level I, Vol. 4, p. 418

Study Session 11-37-a, b, 12-45-g

Calculate and interpret the weighted average cost of capital (WACC) of a company.

Describe how taxes affect the cost of capital from different capital sources.

Calculate and interpret the expected return of an asset using the CAPM.

C is correct.

$r_d = 9.2\%$, the yield to maturity on a par value bond is the coupon rate of the bond.

$$r_p = \frac{D_p}{P_p} = \frac{\$1.35}{\$8.18} = 16.5\%$$

$$r_e = R_F + \beta[E(R_M) - R_F] = 4\% + 1.3[11\%] = 18.3\%$$

$$WACC = w_d r_d (1 - t) + w_p r_p + w_e r_e$$

$$WACC = 30\% \times 9.2\% \times (1 - 35\%) + 15\% \times 16.5\% + 55\% \times 18.3\% = 14.33\%$$

76. Financial risk is *most likely* affected by:

- A. dividends.
- B. long-term leases.
- C. general and administrative costs.

Answer = B

“Measures of Leverage,” Pamela Peterson Drake, Raj Aggarwal, Cynthia Harrington, and Adam Kobor

2012 Modular Level I, Vol. 4, p. 103

Study Session 11-38-a

Define and explain leverage, business risk, sales risk, operating risk, and financial risk, and classify a risk, given a description.

B is correct. As stated on p. 103, “By taking on fixed obligations, such as debt and long-term leases, the company increases its financial risk.”

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77. The following information is available for a firm:

Number of shares outstanding	4 million
Tax rate	40%
Cost of debt (pretax)	10%
Current stock price	\$20.00
Net income	\$6 million

A plan to repurchase \$10 million worth of shares using debt will *most likely* cause the earnings per share to:

- A. increase.
- B. decrease.
- C. remain unchanged.

Answer = A

“Cost of Capital,” Yves Courtois, Gene C. Lai, and Pamela Peterson Drake

2012 Modular Level I, Vol. 4, pp. 40–43

“Dividends and Share Repurchases: Basics,” George Troughton and Gregory Noronha

2012 Modular Level I, Vol. 4, pp. 142–143

Study Session 11-37-b, 11-39-d

Describe how taxes affect the cost of capital from different capital sources.

Calculate and compare the effects of a share repurchase on earnings per share when 1) the repurchase is financed with the company’s excess cash and 2) the company uses funded debt to finance the repurchase.

A is correct.

Long way:

$$\begin{aligned}\text{Current earnings per share} &= \$6,000,000 \div 4,000,000 = \$1.50 \\ \text{Number of shares repurchased} &= \$10,000,000 \div \$20.00 = 500,000 \text{ shares} \\ \text{Adjusted net income} &= \text{Current net income} - [\text{debt} \times \text{"after tax" cost of debt}] \\ &= \$6,000,000 - [\$10,000,000 \times 10\% \times (1 - 40\%)] = \$5,400,000 \\ \text{New earnings per share} &= \$5,400,000 \div [4,000,000 - 500,000] = \$1.54\end{aligned}$$

Short way:

$$\begin{aligned}\text{Current earnings per share} &= \$6,000,000 \div 4,000,000 = \$1.50 \\ \text{Earnings yield} &= \$1.50 \div \$20.00 = 7.5\%\end{aligned}$$

If the after-tax cost of debt ($10\% \times [1 - 40\%] = 6\%$) is below the earnings yield, the earnings per share will increase. This can be derived from Example 7 on p. 142.

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78. A 30-day \$10,000 U.S. Treasury bill sells for \$9,932.40. The discount-basis yield (%) is *closest* to:
- A. 8.11.
 - B. 8.17.
 - C. 8.28.

Answer = A

“Working Capital Management,” Edgar Norton, Jr., Kenneth L. Parkinson, and Pamela Peterson Drake

2012 Modular Level I, Vol. 4, p. 174

Study Session 11-40-e

Calculate and interpret comparable yields on various securities, compare portfolio returns against a standard benchmark, and evaluate a company’s short-term investment policy guidelines.

A is correct. Note: The face value is greater than the purchase price because the T-bill sells at a discount.

$$DBY = \frac{\text{Face value} - \text{Purchase price}}{\text{Face value}} \times \frac{360}{\text{Days to maturity}}$$

$$DBY = \frac{\$10,000 - \$9,932.40}{\$10,000} \times \frac{360}{30} = 8.112\%$$

Questions 79 through 90 relate to Equity Investments

79. A stop-buy order is *most likely* placed when a trader:
- A. thinks that the stock is overvalued.
 - B. wants to limit the loss on a long position.
 - C. wants to limit the loss on a short position.

Answer = C

“Market Organization and Structure,” Larry Harris

2012 Modular Level I, Vol. 5, pp. 51–53

Study Session 13-47-g, h

Compare execution, validity, and clearing instructions.

Compare market orders with limit orders.

C is correct. Investors who have entered into a short sale will incur losses if the stock begins to increase in value. A stop-buy order helps limit the loss on a short position because it becomes valid when the stock price rises above the specified stop price.

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80. The type of voting in board elections that is most beneficial to shareholders with a small number of shares is *best* described as:

- A. statutory voting.
- B. voting by proxy.
- C. cumulative voting.

Answer = C

“The Corporate Governance of Listed Companies: A Manual for Investors,” Kurt Schacht, James C. Allen, and Matthew Orsagh

2012 Modular Level I, Vol. 4, pp. 263–266

“Overview of Equity Securities,” Ryan C. Fuhrmann and Asjeet S. Lamba

2012 Modular Level I, Vol. 5, p. 171

Study Session 11-42-g, 14-50-b

Evaluate, from a shareowner’s perspective, company policies related to voting rules, shareowner-sponsored proposals, common stock classes, and takeover defenses.

Describe differences in voting rights and other ownership characteristics among different equity classes.

C is correct. Cumulative voting allows shareholders to direct their total voting rights to specific candidates, as opposed to having to allocate their voting rights evenly among all candidates. Thus, applying all of the votes to one candidate provides the opportunity for a higher level of representation on the board than would be allowed under statutory voting.

81. An investor gathered the following data in order to estimate the value of the company's preferred stock:

Par value of preferred stock offered at a 6% dividend rate	\$100
Company's sustainable growth rate	5%
Yield on comparable preferred stock issues	11.5%
Investor's marginal tax rate	30%

The value of the company's preferred stock is *closest* to:

- A. \$52.17.
- B. \$74.53.
- C. \$96.92.

Answer = A

“Equity Valuation: Concepts and Basic Tools,” John J. Nagorniak and Stephen E. Wilcox

2012 Modular Level I, Vol. 5, pp. 276–277

Study Session 14-52-d

Calculate the intrinsic value of a non-callable, non-convertible preferred stock.

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A is correct.

$$V_0 = D_0/r = \frac{\$100 \times 0.06}{0.115} = \$52.17.$$

82. An investor gathers the following data.

Year	Earnings per share (\$)	Dividends per share (\$)	ROE
2011	3.20	1.92	12%
2010	3.60	1.80	17%
2009	2.44	1.71	13%
2008	2.50	1.60	15%

To estimate the stock's justified forward P/E, the investor prefers to use the compounded annual earnings growth and the average of the payout ratios over the relevant period (i.e., 2008–2011). If the investor uses 11.5% as her required rate of return, the stock's justified forward P/E is *closest* to:

- A. 10.
- B. 12.
- C. 21.

Answer = C

“Equity Valuation: Concepts and Basic Tools,” John J. Nagorniak and Stephen E. Wilcox
2012 Modular Level I, Vol. 5, pp. 276, 281, 289–291

Study Session 14-52-h

Calculate and interpret the following multiples: price to earnings, price to an estimate of operating cash flow, price to sales, and price to book value.

C is correct.

$$P_0/E_1 = p/(r - g)$$

Earnings growth rate (g) over the period 2008–2011 = $2.50(1 + g)^3 = 3.20$; $g = 8.6\%$.

Payout ratio (p) computation (for example, 2011) = $1.92/3.20 = 0.60$.

Average payout ratio = $(0.60 + 0.50 + 0.70 + 0.64)/4 = 0.61$.

$$P_0/E_1 = p/(r - g) = 0.61/(0.115 - 0.086) = 0.61/0.029 = 21.0.$$

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83. An investor evaluating a company's common stock for investment has gathered the following data.

Earnings per share (2012)	\$2.50
Dividend payout ratio (2012)	60%
Dividend growth rate expected during Years 2013 and 2014	25%
Dividend growth rate expected after Year 2014	5%
Investors' required rate of return	12%

Using the two-stage dividend discount model, the value per share of this common stock in 2012 is *closest* to:

- A. \$28.57.
- B. \$31.57.
- C. \$38.70.

Answer = B

“Equity Valuation: Concepts and Basic Tools,” John J. Nagorniak and Stephen E. Wilcox
2012 Modular Level I, Vol. 5, pp. 284–286

Study Session 14-52-e

Calculate and interpret the intrinsic value of an equity security based on the Gordon (constant) growth dividend discount model or a two-stage dividend discount model, as appropriate.

B is correct. Dividend per share (2012) = \$2.50 (0.6) = \$1.50.

$$V_{2012} = \frac{1.50(1.25)}{1.12} + \frac{1.50(1.25)^2}{1.12^2} + \frac{1.50(1.25)^2 (1.05)}{(0.12 - 0.05)} \times \frac{1}{1.12^2}$$

$$= \$1.67 + \$1.87 + \$28.03 = \$31.57.$$

84. Which of the following is *least likely* to be directly reflected in the returns on a commodity index?
- A. Roll yield
 - B. Changes in the spot prices of underlying commodities
 - C. Changes in the futures prices of commodities in the index

Answer = B

“Security Market Indices,” Paul D. Kaplan and Dorothy C. Kelly
2012 Modular Level I, Vol. 5, p. 109–110

Study Session 13-48-j

Discuss indices representing alternative investments.

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B is correct. Commodity index returns reflect the changes in future prices and the roll yield. Changes in the underlying commodity spot prices are not reflected in a commodity index.

85. A trader who has bought a stock at \$30 is concerned about a downside movement in the stock and would like to place an order that guarantees selling it at \$25. Which of the following will *most likely* help the trader achieve her objective? (GTC = Good-till-cancelled)
- A. "GTC, stop 25, market sell" order
 - B. "GTC, stop 25, limit 25 sell" order
 - C. "put option buy" market order with a strike price of 25

Answer = C

"Market Organization and Structure," Larry E. Harris
2012 Modular Level I, Vol. 5, pp. 51–52
"Option Markets and Contracts," Don M. Chance
2012 Modular Level I, Vol. 6, pp. 82–85
Study Session 13-47-g, h, 17-63-a
Compare execution, validity, and clearing instructions.
Compare market orders with limit orders.
Describe call and put options.

C is correct. Option contracts can be viewed as limit orders for which execution is guaranteed at the strike price. Therefore, a "put buy" order at a strike price of 25 will guarantee selling the stock at 25.

86. A trader who buys a stock priced at \$64 on margin with a leverage ratio of 2.5 and a maintenance margin of 30% will *most likely* receive a margin call when the stock price is at or falls just below:
- A. \$36.57.
 - B. \$44.80.
 - C. \$54.86.

Answer = C

"Market Organization and Structure," Larry E. Harris
2012 Modular Level I, Vol. 5, pp. 43–46
Study Session 13-47-f
Calculate and interpret the leverage ratio, the rate of return on a margin transaction, and the security price at which the investor would receive a margin call.

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C is correct.

$$\text{Equity} = \frac{1}{\text{Leverage ratio}} = \frac{1}{2.5} = 0.4; \text{Initial equity} = \$64 \times 0.4 = \$25.60$$

$$\text{Critical "P" for margin call} = \frac{\text{Equity}}{\text{share}} \div \frac{\text{Price}}{\text{share}} = \frac{\$25.60 + P - \$64}{P} = 30\%; P = \$54.86$$

Alternate solution:

$$\frac{\text{Debit balance}}{1 - \text{maintenance margin \%}} = \frac{64 \times 0.6}{1 - 0.3} = \$54.86$$

87. Compared to its market-value-weighted counterpart, a fundamentally weighted index will *least likely* have a:
- A. value tilt.
 - B. contrarian "effect."
 - C. momentum "effect."

Answer = C

"Security Market Indices," Paul D. Kaplan and Dorothy C. Kelly
2012 Modular Level I, Vol. 5, p. 98
Study Session 13-48-d
Compare the different weighting methods used in index construction.

C is correct. Momentum "effect" is a characteristic of a market-value-weighted index, not a fundamentally weighted index.

88. A U.S. institutional money manager prefers to invest in depository instruments of non-domestic equity securities that are privately placed in the U.S. and not subject to the foreign ownership and capital flow restrictions. The type of security that is *most appropriate* for this investor is:
- A. global registered shares.
 - B. global depository receipts.
 - C. American depository shares.

Answer = B

"Overview of Equity Securities," Ryan C. Fuhrmann and Asjeet S. Lamba
2012 Modular Level I, Vol. 5, pp. 182–184
Study Session 14-50-c, d
Distinguish between public and private equity securities.
Describe methods for investing in non-domestic equity securities.

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B is correct. Global depository receipts (GDRs) meet the investor preferences. They are not subject to the foreign ownership and capital flow restrictions that may be imposed by the issuing company's home country because they are sold outside of that country. GDRs cannot be listed on U.S. exchanges, but they can be privately placed with the institutional investors based in the United States.

89. An equity analyst follows two industries with the following characteristics.

Industry 1:

A few companies with proprietary technologies; products with unique features; high switching costs; and minimal regulatory influences.

Industry 2:

A few companies producing relatively similar products; sales varying with disposable income and employment levels; high capital costs and investment in physical plants; rapid shifts in market shares of competing firms; and minimal regulatory influences.

Based on the above information, the analyst will *most* appropriately conclude that compared to the firms in Industry 2, those in Industry 1 would potentially have:

- A. larger economic profits.
- B. over-capacity problems.
- C. high bargaining power of customers.

Answer = A

"Introduction to Industry and Company Analysis," Patrick W. Dorsey, Anthony M. Fiore, and Ian Rossa O'Reilly

2012 Modular Level I, Vol. 5, pp. 208, 223–233

Study Session 14-51-e, h, i

Describe the elements that need to be covered in a thorough industry analysis.

Explain effects of industry concentration, ease of entry, and capacity on return on invested capital and pricing power.

Describe the principles of strategic analysis of an industry.

A is correct. The economic profit (the spread between the return on invested capital and the cost of capital) tends to be larger in industries with differentiated products, greater pricing power, and high switching costs to customers. Industry 1 has these features. Firms in Industry 2, on the other hand, have little pricing power (undifferentiated products and rapid shifts in market shares indicating intense rivalry), which is indicative of potentially smaller economic profits.

90. The Gordon growth model is *most* appropriate for valuing the common stock of a dividend-paying company that is:
- A. young and just entering the growth phase.
 - B. experiencing a higher than the sustainable growth rate.
 - C. mature and relatively insensitive to the economic fluctuations.

Answer = C

“Equity Valuation: Concepts and Basic Tools,” John J. Nagorniak and Stephen E. Wilcox
2012 Modular Level I, Vol. 5, pp. 279, 285
Study Session 14-52-f

Identify companies for which the constant growth or a multistage dividend discount model is appropriate.

C is correct. The Gordon growth model is most appropriate for valuing common stock of a dividend-paying company that is mature and relatively insensitive to the business cycle or economic fluctuations.

Questions 91 through 96 relate to Derivative Investments

91. Which of the following is *least likely* one of main purposes of derivative markets?
- A. Reveal prices and volatility of the underlying assets
 - B. Improve market efficiency by lowering transaction costs
 - C. Enable companies to more easily practice risk management

Answer = B

“Derivative Markets and Instruments,” Don M. Chance
2011 Modular Level I, Vol. 6, pp. 18–21
Study Session 17-60-c

Describe the purposes and criticisms of derivative markets.

B is correct because derivative markets improve market efficiency for the underlying assets by increasing market fairness and competitiveness, not by lowering transaction costs. Low transactions costs are a characteristic of derivative markets, not one of their purposes.

92. A futures trader takes a long position of 10 contracts. The initial margin requirement is \$10 per contract and the maintenance margin requirement is \$7 per contract. She deposits the required initial margin on the trade date. On Day 3, her margin account balance is \$40. What is the variation margin on Day 4?
- A. \$30
 - B. \$60
 - C. \$70

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Answer = B

“Futures Markets and Contracts,” Don M. Chance

2011 Modular Level I, Vol. 6, pp. 55–59

Study Session 17-62-c

Distinguish between margin in the securities markets and margin in the futures markets, and explain the role of initial margin, maintenance margin, variation margin, and settlement in futures trading.

B is correct because on any day when the balance in the margin account falls below the maintenance margin, the trader must deposit sufficient funds to bring the balance back up to the initial margin requirement. This additional amount is called the “variation margin.” Therefore, $\$100 - \$40 = \$60$ variation margin.

93. A portfolio manager enters into an equity swap with a swap dealer. The portfolio manager agrees to pay the return on the Value index and receive the return on the Growth index. The swap’s notional principal is \$50 million and the payments will be made semi-annually. The levels of the equity indices are as follows:

Index	Level at Start of Swap	Level 6 Months Later
Value Index	5,460	5,350
Growth Index	1,190	1,200

The net amount due to the portfolio manager after 6 months is *closest to*:

- A. \$587,158.
- B. \$1,007,326.
- C. \$1,427,494.

Answer = C

“Swap Markets and Contracts,” Don M. Chance

2011 Modular Level I, Vol. 6, pp. 144–147

Study Session 17-64-b

Describe, calculate, and interpret the payment of currency swaps, plain vanilla interest rate swaps, and equity swaps.

C is correct because the portfolio manager pays the Value index return, which had a loss, and receives the Growth index, which had a gain during the period. Therefore, the portfolio manager will receive a cash flow from the swap dealer.

Value index payment = $((5350/5460) - 1) \times \$50,000,000 = -\$1,007,326$.

Growth index payment = $((1200/1190) - 1) \times \$50,000,000 = \$420,168$.

Net payment to portfolio manager = $\$420,168 - (-\$1,007,326) = \$1,427,494$.

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94. Epsilon Inc., a U.S. based company, must pay ¥1,000,000,000 to its Japanese component supplier in 3 months. Epsilon approaches a dealer and enters into a USD/JPY currency forward contract, containing a stipulation for physical delivery, to manage the foreign exchange risk associated with the payment to its supplier. Which of these *best* describes Epsilon's currency forward contract?
- A. The dealer will deliver yen on expiration.
 - B. The amount of USD exchanged for JPY is determined at expiration.
 - C. Epsilon may receive or pay JPY, depending on the exchange rate at expiration.

Answer = A

"Forward Markets and Contracts," Don M. Chance

2011 Modular Level I, Vol. 6, pp. 43–44

Study Session 17-61-h

Describe the characteristics of currency forward contracts.

A is correct because this currency forward contract requires physical delivery; therefore, Epsilon receives 1,000,000,000 JPY from the dealer in exchange for paying USD.

95. The greater of either zero or the present value of the exercise price minus the underlying price is *most likely* the lower bound on the price of a(n):
- A. European put option.
 - B. American put option.
 - C. American call option.

Answer = A

"Option Markets and Contracts," Don M. Chance

2011 Modular Level I, Vol. 6, pp. 103–107

Study Session 17-63-k

Calculate and interpret the lowest prices of European and American calls and puts based on the rules for minimum values and lower bounds.

A is correct because, for a European put, the exercise price must be adjusted to the present value because the option can only be exercised on expiration.

96. An investor purchases ABC stock at \$71 per share and executes a protective put strategy. The put option used in the strategy has a strike price of \$66, expires in two months, and is purchased for \$1.45. At expiration, the protective put strategy breaks even when the price of ABC is *closest to*:
- A. \$64.55.
 - B. \$67.45.
 - C. \$72.45.

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Answer = C

“Risk Management Applications of Option Strategies,” Don M. Chance

2011 Modular Level I, Vol. 6, pp. 172–175

Study Session 17-65-b

Determine the value at expiration, profit, maximum profit, maximum loss, break-even underlying price at expiration, and payoff graph of a covered call strategy and a protective put strategy, and explain the risk management application of each strategy.

C is correct because to break even, the underlying stock must be at least as high as the amount expended up front to establish the position. To establish the protective put, the investor would have spent $\$71 + \$1.45 = \$72.45$.

Questions 97 through 108 relate to Fixed Income Investments

97. The table below provides a history of a fixed income security’s coupon rate and the risk free rate over a five-year period.

Year	Risk Free Rate	Coupon Rate
1	3.00%	6.00%
2	3.50%	5.00%
3	4.25%	3.50%
4	3.70%	4.60%
5	3.25%	5.50%

The security is *most likely* a(n):

- A. step-up note.
- B. inverse floater.
- C. deferred coupon bond.

Answer = B

“Features of Debt Securities,” Frank J. Fabozzi

2012 Modular Level I, Vol. 5, pp. 325–330

Study Session 15-53-b

Describe the basic features of a bond, the various coupon rate structures, and the structure of floating-rate securities.

B is correct because the security’s coupon rate moves in the opposite direction (inversely) with the risk free rate. (Specifically: Coupon rate = $12.00\% - 2 \times \text{Risk free rate}$.)

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98. For a 10-year floating-rate security, if market interest rates change by 1%, the change in the value of the security will *most likely* be:

- A. zero.
- B. related to the security's coupon reset frequency.
- C. similar to an otherwise identical fixed-rate security.

Answer = B

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 356–357

Study Session 15-54-e

Explain the interest rate risk of a floating-rate security and why its price may differ from par value.

B is correct because the interest rate sensitivity of a floating-rate security comes primarily from the time remaining until its next coupon reset.

99. When a bank creates a collateralized loan obligation (CLO) to divest of commercial loans that it owns, the process is *best* described as a(n):

- A. arbitrage transaction.
- B. balance sheet transaction.
- C. capital infusion transaction.

Answer = B

"Overview of Bond Sectors and Instruments," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 426–427

Study Session 15-55-j

Describe collateralized debt obligations.

B is correct because a balance sheet transaction is one that removes assets from the balance sheet of the institution and is often motivated by the desire to reduce the institution's risk.

100. Which of the following is *closest* to the value of a 10-year, 6% coupon, \$100 par value bond with semi-annual payments assuming an annual discount rate of 7%?

- A. \$92.89
- B. \$99.07
- C. \$107.44

Answer = A

"Introduction to the Valuation of Debt Securities," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 496–498

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Study Session 16-57-c

Calculate the value of a bond (coupon and zero coupon).

A is correct because a security with 19 semi-annual payments of \$3 interest and a 20th payment of \$103 (interest plus return of face value) with a semi-annual discount rate of 3.5% is \$92.89 or

$$\begin{aligned} & \frac{3}{1.035^1} + \frac{3}{1.035^2} + \frac{3}{1.035^3} + \frac{3}{1.035^4} + \frac{3}{1.035^5} + \frac{3}{1.035^6} + \frac{3}{1.035^7} + \frac{3}{1.035^8} \\ & + \frac{3}{1.035^9} + \frac{3}{1.035^{10}} + \frac{3}{1.035^{11}} + \frac{3}{1.035^{12}} + \frac{3}{1.035^{13}} + \frac{3}{1.035^{14}} + \frac{3}{1.035^{15}} \\ & + \frac{3}{1.035^{16}} + \frac{3}{1.035^{17}} + \frac{3}{1.035^{18}} + \frac{3}{1.035^{19}} + \frac{103}{1.035^{20}} = 92.89. \end{aligned}$$

101. Consider a \$100 par value bond with a 7% coupon paid annually and 5 years to maturity. At a discount rate of 6.5%, the value of the bond today is \$102.08. One day later, the discount rate rises to 7.5%. Assuming the discount rate remains at 7.5% over the remaining life of the bond, what is most likely to occur to the price of the bond between today and maturity?

- A. Increases then decreases
- B. Decreases then increases
- C. Decreases then remains unchanged

Answer = B

“Introduction to the Valuation of Debt Securities,” Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 492–495

Study Session 16-57-d

Explain how the price of a bond changes if the discount rate changes and as the bond approaches its maturity date.

B is correct because if the discount rate rises to 7.5% from 6.5%, the price of a bond decreases. At a discount rate of 7.5%, the bond sells at a discount to face value. As a discount bond approaches maturity, it will increase in price over time until it reaches par at maturity.

102. A fixed income security’s current price is 101.45. You estimate that the price will rise to 103.28 if interest rates decrease 0.25% and fall to 100.81 if interest rates increase 0.25%. The security’s effective duration is closest to:
- A. 1.22.
 - B. 4.87.
 - C. 9.74.

Answer = B

“Introduction to the Measurement of Interest Rate Risk,” Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 620–621

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Study Session 16-59-d

Calculate and interpret the effective duration of a bond, given information about how the bond's price will increase and decrease for given changes in interest rates.

B is correct because the effective duration equals

$$\begin{aligned} & (\text{Price if rates fall} - \text{Price if rates rise}) / (2 \times \text{Current price} \times \text{Change in rates}) \\ & = (103.28 - 100.81) / (2 \times 101.45 \times 0.0025) = 4.87. \end{aligned}$$

103. An analyst reviews a corporate bond indenture that contains these two covenants:

- 1) The borrower will pay interest semi-annually and principal at maturity.
- 2) The borrower will not incur additional debt if its debt/capital ratio is more than 50%.

What types of covenants are these?

- A. Both are affirmative covenants.
- B. Covenant 1 is negative and Covenant 2 is affirmative.
- C. Covenant 1 is affirmative and Covenant 2 is negative.

Answer = C

"Features of Debt Securities," Frank J. Fabozzi

2012 Modular Level I, Vol. 5, p. 323

Study Session 15-53-a

Explain the purposes of a bond's indenture and describe affirmative and negative covenants.

C is correct because to pay interest and principal is one of the most common affirmative covenants. Negative covenants set forth certain limitations and restrictions on the borrower's activities. The more common restrictive covenants are those that impose limitations on the borrower's ability to incur additional debt unless certain tests are satisfied, such as a debt/capital ratio.

104. An investor sells a bond at the quoted price of \$98.00. In addition he receives accrued interest of \$4.40. The clean price of the bond is:

- A. par value plus accrued interest.
- B. accrued interest plus agreed upon bond price.
- C. agreed upon bond price excluding accrued interest.

Answer = C

"Features of Debt Securities," Frank J. Fabozzi

2012 Modular Level I, Vol. 5, pp. 330

Study Session 15-53-c

Define accrued interest, full price, and clean price.

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C is correct because the agreed upon bond price without accrued interest is simply referred to as the price as well as the clean price.

105. An investor purchases a 5% coupon bond maturing in 15 years for par value. Immediately after purchase, the yield required by the market increases. The investor would then most likely have to sell the bond at:
- A. par.
 - B. a discount.
 - C. a premium.

Answer = B

“Risks Associated with Investing in Bonds,” Frank J. Fabozzi

2012 Modular Level I, Vol. 5, pp. 353

Study Session 15-54-b

Identify the relations among a bond’s coupon rate, the yield required by the market, and the bond’s price relative to par value (i.e., discount, premium, or equal to par).

B is correct because the bond would sell below par or at a discount if the yield required by the market rises above the coupon rate. Because the bond initially was purchased at par, the coupon rate equals the yield required by the market. Subsequently, if yields rise above the coupon, the bond’s market price would fall below par.

106. Given two otherwise identical bonds, when interest rates rise, the price of Bond A declines more than the price of Bond B. Compared to Bond B, Bond A most likely:
- A. is callable.
 - B. has a lower coupon.
 - C. has a shorter maturity.

Answer = B

“Risks Associated with Investing in Bonds,” Frank J. Fabozzi

2012 Modular Level I, Vol. 5, pp. 354–355

Study Session 15-54-c

Explain how a bond’s maturity, coupon, embedded options, and yield level affect its interest rate risk.

B is correct because the lower the coupon rate, the greater the bond’s price sensitivity to changes in interest rates.

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107. A BBB-rated corporation wishes to issue debt to finance its operations at the lowest cost possible. If it decides to sell a pool of receivables into a special purpose vehicle (SPV), its primary motivation is most likely to:
- A. allow the corporation to retain a first lien on the assets of the SPV.
 - B. segregate the assets into a bankruptcy-remote entity for bondholders.
 - C. receive a guaranty from the SPV to improve the corporation's credit rating.

Answer = B

"Overview of Bond Sectors and Instruments," Frank J. Fabozzi

2012 Modular Level I, Vol. 5, pp. 424–426

Study Session 15-55-i

Define an asset-backed security, describe the role of a special purpose vehicle in an asset-backed security's transaction, state the motivation for a corporation to issue an asset-backed security, and describe the types of external credit enhancements for asset-backed securities.

B is correct because a key motivation for a corporation to establish a special purpose vehicle (SPV) is to separate it as a legal entity. In the case of bankruptcy for the corporation, the SPV is unaffected because it is not a subsidiary of the corporation. Given this arrangement, the SPV can achieve a rating as high as AAA and borrow at lower rates than the corporation.

108. Which of the following is least likely a tool used by the U.S. Federal Reserve Bank to directly influence the level of interest rates?
- A. Verbal persuasion
 - B. Open market operations
 - C. Setting the rate on 30-year bonds

Answer = C

"Understanding Yield Spreads," Frank J. Fabozzi

2012 Modular Level I, Vol. 5, pp. 448–449

Study Session 15-56-a

Identify the interest rate policy tools available to a central bank.

C is correct because the U.S. Federal Reserve Bank (Fed) uses policy tools to directly influence short-term interest rates. It only indirectly influences long-term interest rates. The market, not the Fed, sets rates on 30-year bonds.

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Questions 109 through 114 relate to Alternative Investments

109. Which of the following most likely trades in the secondary markets?

- A. Open-end funds
- B. Closed-end funds
- C. Unit investment trusts

Answer = B

“Alternative Investments,” Bruno Solnik and Dennis McLeavey

2012 Modular Level I, Vol. 6, pp. 189–190

Study Session 18-66-a

Distinguish between an open-end and a closed-end fund, and explain how net asset value of a fund is calculated and the nature of fees charged by investment companies.

B is correct because closed-end funds trade in the secondary markets and do not offer a redemption feature.

110. An analyst is evaluating an investment in an apartment complex based on the following annual data:

Gross potential rental income	\$2,100,000
Estimated vacancy and collection expenses	3%
Operating expenses	\$1,600,000
Depreciation	300,000
Current mortgage rate	5%
Financing percentage	80%
Market capitalization rate	12%
Cost of equity	15%

Based on the income approach, the value of the investment is *closest* to:

- A. \$1,141,667.
- B. \$3,641,667.
- C. \$6,242,857.

Answer = B

“Alternative Investments,” Bruno Solnik and Dennis McLeavey

2012 Modular Level I, Vol. 6, pp. 205–207

Study Session 18-66-g

Calculate the net operating income (NOI) from a real estate investment, the value of a property using the sales comparison and income approaches, and the after-tax cash flows, net present value, and yield of a real estate investment.

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B is correct because using the income approach,
 $(\$2,100,000 - .03 \times \$2,100,000 - \$1,600,000)/0.12 = \$437,000/0.12 = \$3,641,667$.
 The property is appraised based on cash flows and is independent of the financing decision.
 Thus, the market capitalization rate is used rather than the lending rate. Depreciation is also not deducted because it is implicitly assumed that repairs and maintenance allow the investor to keep the building in good condition.

111. Which of the following statements regarding biases in hedge fund performance in hedge fund databases is least likely correct?

- A. Only hedge fund managers with good track records enter the database, creating a positive bias.
- B. The correlations between asset class returns are artificially low when underlying assets trade infrequently.
- C. Hedge fund database administrators decide which funds to include in the database to overcome self-selection bias.

Answer = C

“Alternative Investments,” Bruno Solnik and Dennis McLeavey
 2012 Modular Level I, Vol. 6, pp. 227–229
 Study Session 18-66-m

Describe the performance of hedge funds and the biases present in hedge fund performance measurement, and explain the effect of survivorship bias on the reported return and risk measures for a hedge fund database.

C is correct because hedge fund managers themselves, not database administrators, decide whether they want to be included in a database. Managers who have funds with an unimpressive track record will not wish to have that information exposed.

112. A project that requires an initial investment of €5 million is expected to pay €22 million at the end of five years if it is successful. The probabilities of failure for the project are provided below:

Year	1	2	3	4	5
Failure Probability	0.25	0.20	0.15	0.15	0.15

Assuming the cost of capital for the project is 16%, the project’s expected net present value is *closest* to:

- A. –€3,157,000.
- B. –€1,140,000.
- C. €2,017,000.

Answer = B

“Alternative Investments,” Bruno Solnik and Dennis McLeavey

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2012 Modular Level I, Vol. 6, pp. 216–218

Study Session 18-66-i

Calculate the net present value (NPV) of a venture capital project, given the project's possible payoff and conditional failure probabilities.

B is correct because you calculate the probability of success as $(1 - .25) \times (1 - .20) \times (1 - .15) \times (1 - .15) \times (1 - .15) = 0.3685$. Then, calculate the NPV from success as $[(22,000,000/1.16^5) - 5,000,000] \times 0.3685 = 2,017,000$. The NPV of failure is $-5,000,000 \times (1 - .3685) = -3,157,000$. The expected NPV of the project is $2,017,000 - 3,157,000 = -1,140,000$.

113. When market participants expect the spot price of a commodity to be higher in the future, the commodity market is most likely said to be in:
- A. contango.
 - B. full carry.
 - C. backwardation.

Answer = A

"Investing in Commodities," Ronald G. Layard-Liesching

2012 Modular Level I, Vol. 6, pp. 262–264

Study Session 18-67-a

Explain the relationship between spot prices and expected future prices in terms of contango and backwardation.

A is correct because when a commodity market is in contango, futures prices are higher than the spot price because market participants believe the spot price will be higher in the future. When spot prices are above the futures price, the market is said to be in backwardation.

114. Which of the following is least likely a reason for discounting the value of stock in a closely held company?
- A. Illiquidity
 - B. Marketability
 - C. Controlling interest

Answer = C

"Alternative Investments," Bruno Solnik and Dennis McLeavey

2012 Modular Level I, Vol. 6, pp. 232–233

Study Session 18-66-o

Describe alternative valuation methods for closely held companies, and distinguish among the bases for the discounts and premiums for these companies.

C is a correct because company control would increase the value of the closely held company or add a premium.

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Questions 115 through 120 relate to Portfolio Management

115. Which of the following types of institutions is most likely to have a long investment time horizon and a higher level of risk tolerance?

- A. A bank
- B. An endowment
- C. An insurance company

Answer = B

“Portfolio Management: An Overview,” Robert M. Conroy and Alistair Byrne
2012 Modular Level I, Vol. 4, pp. 289–296
Study Session 12-43-b

Describe types of investors and distinctive characteristics and needs of each.

B is correct. Endowments have a long investment time horizon and a high level of risk tolerance. (See Exhibit 14 on pp. 295–296.)

116. An investor’s transactions in a mutual fund and the fund’s returns over a four-year period are provided in the table below:

	Year			
	1	2	3	4
New investment at the beginning of the year	\$2,500	\$1,500	\$1,000	\$0
Investment return for the year	–20%	65%	–25%	10%
Withdrawal by investor at the end of the year	\$0	–\$500	–\$500	\$0

Based on these data, the money-weighted return (or internal rate of return) for the investor is *closest* to:

- A. 2.15%.
- B. 3.96%.
- C. 7.50%.

Answer = B

“Portfolio Risk and Return Part I,” Vijay Singal
2012 Modular Level I, Vol. 4, pp. 324–330
Study Session 12-44-a

Calculate and interpret major return measures and describe their appropriate uses.

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B is correct. The calculations are shown below:

Year	1	2	3	4
Starting balance (\$)	0.00	2,000.00	5,275.00	4,206.25
New investment at the beginning of the year (\$)	2,500.00	1,500.00	1,000.00	0.00
Net balance at the beginning of year (\$)	2,500.00	3,500.00	6,275.00	4,206.25
Investment return for the year	–20%	65%	–25%	10%
Investment gain (loss) (\$)	–500.00	2,275.00	–1,568.75	420.63
Withdrawal by investor at the end of the year (\$)	0.00	–500.00	–500.00	0.00
Balance at the end of year (\$)	2,000.00	5,275.00	4,206.25	4,626.88

The money-weighted return is calculated by solving for i in the equation below:

$$2500 = \frac{-1500}{(1+i)^1} + \frac{-500}{(1+i)^2} + \frac{500}{(1+i)^3} + \frac{4626.88}{(1+i)^4}$$

CF0 = –2,500.

CF1 = –1,500 (new investment at beginning of Year 2).

CF2 = –500 (withdrawal of 500 at end of Year 2, –1,000 new investment at beginning Year 3).

CF3 = 500 (withdrawal of 500 at end of Year 3).

CF4 = 4,626.88 (balance at end of Year 4).

$i = .0396$.

117. Selected information about shares of two companies is provided below:

Stock	Standard Deviation	Correlation of Returns ¹	Portfolio Weights
Cable Incorporated	30%	0.65	68%
GPTA Company	20%		32%

¹ Correlation of returns between Cable Incorporated and GPTA Company

The standard deviation of returns of the portfolio formed with these two stocks is *closest to*:

- A. 25.04%.
- B. 26.80%.
- C. 32.85%.

Answer = A

“Portfolio Risk and Return Part I,” Vijay Singal

2012 Modular Level I, Vol. 4, pp. 355–360

Study Session 12-44-e

Calculate and interpret portfolio standard deviation.

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A is correct. Portfolio standard deviation =

$$\sqrt{(0.68^2)(0.3^2) + (0.32^2)(0.2^2) + 2(0.68)(0.32)(0.65)(0.3)(0.2)} = 0.2504.$$

118. Risk that can be attributed to factor(s) that impact a company or industry is best described as:

- A. market risk.
- B. systematic risk.
- C. unsystematic risk.

Answer = C

“Portfolio Risk and Return Part II,” Vijay Singal

2012 Modular Level I, Vol. 4, pp. 410–411

Study Session 12-45-c

Explain systematic and nonsystematic risk, including why an investor should not expect to receive additional return for bearing nonsystematic risk.

C is correct. Risk that is due to company-specific or industry-specific factors is referred to as unsystematic risk.

119. A stock has a correlation of 0.45 with the market and a standard deviation of returns of 12.35%. If the market has a standard deviation of returns of 8.25%, then the beta of the stock is closest to:

- A. 0.30.
- B. 0.67.
- C. 1.50.

Answer = B

“Portfolio Risk and Return Part II,” Vijay Singal

2012 Modular Level I, Vol. 4, pp. 415–417

Study Session 12-45-e

Calculate and interpret beta.

B is correct.

$$\beta = \frac{\rho_{im}\sigma_i\sigma_m}{\sigma_m^2}$$
$$\frac{0.45 \times 0.1235 \times 0.0825}{0.0825^2} = 0.67$$

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120. Which of the following factors is *least likely* to impact an individual's ability to take risk?

- A. Time horizon
- B. Personality type
- C. Expected income

Answer = B

"Basics of Portfolio Management and Construction," Alistair Byrne and Frank E. Smuddle
2012 Modular Level I, Vol. 4, p. 457–458

Study Session 12-46-d

Distinguish between the willingness and the ability (capacity) to take risk in analyzing an investor's financial risk tolerance.

B is correct. An individual's ability to take risk is impacted by such factors as time horizon and expected income. Personality type is most likely to impact an individual's willingness to take risk.