2012 Level I Mock Exam: Afternoon Session

The afternoon 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**

Questions 1 through 18 relate to Ethical and Professional Standards

1. As a condition of his employment with an investment bank, Abasi Hasina, CFA, was required to sign an employment contract, including a non-compete clause restricting him from working for a competitor for three years after leaving the employer. After one year, Hasina quits his job for a comparable position with an investment bank in a country where non-compete clauses are illegal. Lawyers with whom he consulted prior to taking the new position determined the non-compete clause was a violation of human rights and thus illegal. Did Hasina *most likely* violate the CFA Institute Code of Ethics?

   A. Yes
   B. No, because the non-compete clause violates his human rights
   C. No, because the non-compete clause is illegal in the new country of employment

   Answer = A

   "Code of Ethics and Standards of Professional Conduct," CFA Institute
   2012 Modular Level I, Vol. 1, p. 15
   Study Session 1-1-c
   Explain the ethical responsibilities required by the Code and Standards, including the multiple sub-sections of each standard.
   "Guidance for Standards I-VII," CFA Institute
   2012 Modular Level I, Vol. 1, pp. 19–21, 46–47
   Study Session 1-2-a
   Demonstrate and explain the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity.

   A is correct because by failing to adhere to the non-compete clause he agreed to abide by when signing his employment contract, Hasina shows a lack of professional integrity toward his employer. This behavior reflects poorly on the good reputation of members and is a violation of the Code of Ethics, which states that members and candidates must act with integrity, and Standard I (D) Misconduct, which states that members and candidates must not engage in any professional conduct involving dishonesty, fraud, or deceit or commit any act that reflects adversely on their professional reputation, integrity, or competence. The Code of Ethics at times requires a member or candidate to uphold a higher standard than that required by law, rule, or regulation, or in this case the strict application of the employment agreement.

2. Benefits of compliance with the CFA Institute Global Investment Performance Standards (GIPS®) *least likely* include:

   A. strengthening of internal controls.
   B. participation in competitive bidding.
   C. elimination of in-depth due diligence for investors.

   Answer = C

"Introduction to the Global Investment Performance Standards (GIPS®)," CFA Institute
2011 Modular Level I, Vol. 1, pp. 172–173
Study Session 1-3-a
Explain why the GIPS standards were created, what parties the GIPS standards apply to, and who is served by the standards.

C is correct because compliance with the GIPS standards does not eliminate the need for in-depth due diligence on the part of the investor.

3. Who is *most likely* responsible for claiming and maintaining compliance with the CFA Institute Global Investment Performance Standards (GIPS®)?

   A. Independent verification firms
   B. The firm claiming compliance
   C. The performance measurement department

   Answer = B

   "Introduction to the Global Investment Performance Standards (GIPS®)," CFA Institute
   2012 Modular Level I, Vol. 1, p. 173
   Study Session 1-3-c
   Explain the requirements for verification.

   B is correct because firms that claim compliance with the GIPS standards are responsible for their claim of compliance and for maintaining that compliance.

4. Mariam Musa, CFA, head of compliance at Dunfield Brokers, questions her colleague Omar Kassim, a CFA candidate and a research analyst, about his purchase of shares in a company for his own account immediately before he publishes a "buy" recommendation. He defends his actions by stating he has done nothing wrong because Dunfield does not have any personal trading policies in place. The CFA Institute Code of Ethics and Standards of Professional Conduct were *most likely* violated by:

   A. only Musa.
   B. only Kassim.
   C. both Musa and Kassim.

   Answer = C

   "Guidance for Standards I-VII," CFA Institute
   2012 Modular Level I, Vol. 1, pp. 101–103, 131
   Study Session 1-2-b
   Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

   C is correct because both Musa and Kassim violated the Standards of Professional Conduct. Musa violated Standard IV (C) Responsibilities of Supervisors by not ensuring policies were in place to prevent violations of the Code and Standards (in this case Standard VI (B) Priority of Transactions) by someone subject to her supervision. As the head of compliance, Musa supervised Kassim and must meet her supervisory responsibilities outlined in the Standards of Professional Conduct. Kassim violated Standard VI (B) Priority of Transactions in that he did not give sufficient priority to Dunfield's clients before trading on his recommendation.

5. Zhao Xuan, CFA, is a sell side investment analyst. While at a software industry conference, Zhao hears rumors that Green Run Software may have falsified its financial results. When she returns to her office, Zhao conducts a thorough analysis of Green Run. Based on her research, including discussions with some of Green Run's customers, Zhao is convinced that Green Run's reported 50% increase in net income during recent quarters is completely fictitious. So far, however, Zhao is the only analyst suspicious about Green Run's reported earnings. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, the *least* appropriate action for Zhao is to:

   A. report her suspicions to Green Run's management.
   B. do nothing, until other analysts support her analysis.
   C. recommend her clients sell their Green Run shares immediately.

   Answer = B

   CFA Institute Standards
   2012 Modular Level I, Vol. 1, pp. 49–51
   Study Session 1-2-c
   Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

   B is correct because the analyst has conducted thorough research that indicates the company falsified its financial results, and she should request the company address this issue publicly as recommended by Standard II (A) Material Nonpublic Information. If a member or candidate determines that information is material, the member or candidate should make reasonable efforts to achieve public dissemination of the information. This effort usually entails encouraging the issuer company to make the information public. If public dissemination is not possible, the member or candidate must communicate the information only to the designated supervisory and compliance personnel within the member's or candidate's firm and must not take investment action on the basis of the information.

6. Richard Cardinal, CFA, is the founder of Volcano Capital Research, an investment management firm whose sole activity is short selling. Cardinal seeks out companies whose stocks have had large price increases. Cardinal also pays several lobbying firms to update him immediately on any legislative or regulatory changes that may impact his target companies. Cardinal sells short those target companies he estimates are near the peak of their sales and earnings and that his sources identify as facing legal or regulatory challenges. Immediately after he sells a stock, Cardinal conducts a public relations campaign to disclose all of the negative information he has gathered on the company, even if the information is not yet public. Which of Cardinal's following actions is *least likely* to be in violation of the CFA Institute Standards of Professional Conduct?

   A. Selling stock short
   B. Trading on information from lobbyists
   C. Disclosing information about target companies

   Answer = A

   CFA Institute Standards
   2012 Modular Level I, Vol. 1, pp. 59–60, 108
   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 selling stock short is a management strategy and does not necessarily violate any aspect of the Code and Standards.

7. Kirsten Kelso, CFA, is a research analyst at an independent research firm. Kelso is part of a team of analysts who focus on the automobile industry. Recently, Kelso disagreed with two research sell recommendations written by her team even though she felt confident the research process was properly conducted. In a webcast open to all institutional but not retail clients, Kelso states "even though my name is on the sell reports, these stocks are a buy in part because sales and share prices for both auto companies will rise significantly due to strong demand for their vehicles." Kelso's actions would *least likely* violate which of the following CFA Institute Standards of Professional Conduct?

   A. Fair Dealing
   B. Communication with Clients
   C. Diligence and Reasonable Basis

   Answer = C

   CFA Institute Standards
   2012 Modular Level I, Vol. 1, pp. 71, 110, 118
   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 recommendation is based on a reasonable and adequate research process, so the analyst could follow the research team's opinion, as required by Standard V (A) Diligence and Reasonable Basis.

8. Gardner Knight, CFA, is a product development specialist at an investment bank. Knight is responsible for creating and marketing collateralized debt obligations (CDOs) consisting of residential mortgage bonds. In the marketing brochure for his most recent CDO, Knight provided a list of the mortgage bonds that the CDO was created from. The brochure also states "an independent third party, the collateral manager, had sole authority over the selection of all mortgage bonds used as collateral in the CDO." However, Knight met with the collateral manager and helped her select the bonds for the CDO. Knight is *least likely* to be in violation of which of the following CFA Institute Standards of Professional Conduct?

   A. Suitability
   B. Conflicts of Interest
   C. Client Communication

   Answer = A

   CFA Institute Standards
   2012 Modular Level I, Vol. 1, pp. 78, 116–117, 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 there is no indication the investment is unsuitable for investors and in violation of Standard III (C) Suitability.

9. Monique Gretta, CFA, is a research analyst at East West Investment Bank. Previously, Gretta worked at a mutual fund management company and has a long-standing client relationship with the managers of the funds and their institutional investors. Gretta often provides fund managers, who work for Gretta's former employer, with draft copies of her research before disseminating the information to all of the bank's clients. This practice has helped Gretta avoid several errors in her reports, and she believes it is beneficial to the bank's clients, even though they are not aware of this practice. Regarding her research, Gretta *least likely* violated the CFA Institute Code of Ethics and Standards of Professional Conduct because:

   A. her report is a draft.
   B. this practice benefits all clients.
   C. the long-standing client relationships are not disclosed.

   Answer = C

   CFA Institute Standards
   2012 Modular Level I, Vol. 1, pp. 71–72
   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 analyst does not violate any of the Standards of Professional Conduct by having long-standing client relationships and generally is not required to disclose such relationships. However, the analyst is not treating all clients fairly as required by Standard III (B) Fair Dealing when disseminating investment recommendations; disclosure of the relationship with long-standing clients is not the issue. The analyst has advantaged some clients over others by providing advance information, and all clients do not have a fair opportunity to act on the information within the draft report. Members and candidates may differentiate their services to clients, but different levels of service must not disadvantage or negatively affect clients.

10. Colin Caldwell, CFA, is the chief investment officer of Northwest Mutual Fund, whose investment objective is to invest in fixed income emerging market securities. Caldwell allocates the fund's assets primarily to bonds of commodity producers in emerging markets and invests in a combination of several different investments to ensure an acceptable level of risk. The allocation is clearly disclosed in all fund communications. High volatility in the commodities markets at the start of the year makes Caldwell pessimistic about returns, so he shifts the fund into emerging market and U.S. government securities, positions he maintains at the end of the year. This change is noted in the next annual report to fund shareholders. Caldwell's investment change *least likely* violated the CFA Institute Code of Ethics and Standards of Professional Conduct concerning:

A. diversification.
B. communication with clients.
C. investments outside his mandate.

Answer = A

"Guidance for Standards I-VII," CFA Institute
2012 Modular Level I, Vol. 1, pp. 78–81, 116–117
Study Session 1-2-a
Demonstrate and explain the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity.

A is correct because the investment officer has invested in a combination of several different investments to ensure an acceptable level of risk rather than having all assets in a single investment, and he has sought a reasonable amount of diversification. However, the shift into emerging market and U.S. government securities was communicated to clients in the annual report and not on an ongoing basis, in violation of Standard V (B) Communication with Clients and Prospective Clients. Additionally, the investment officer has not followed the investment style previously communicated to fund investors (i.e., to invest in fixed income emerging market securities), specifically, when he invested in U.S. government securities, a violation of Standard III (C) Suitability.

11. Robin Herring, CFA, is a government bond research analyst at an independent credit rating agency. A competitor credit rating agency just downgraded the bonds of a government Herring follows. Herring notes all of the information in the competitor's report was covered in his analysis published last week. In the past, Herring has been slow to downgrade bonds, so he starts to doubt his own analysis after seeing the competitor's report. Herring decides to reissue his credit rating of this government bond and match the competitor's downgrade. In his revised report, Herring states that new information has been made available to justify the downgrade. Herring posts the revision on the credit rating agency's website and provides it by e-mail to all clients who received the original. Herring's rating change *least likely* violated which of the following CFA Institute Code of Ethics and Standards of Professional Conduct?

A. Fair Dealing
B. Communication with Clients
C. Diligence and Reasonable Basis

Answer = A

CFA Institute Standards
2012 Modular Level I, Vol. 1, pp. 38, 71–72, 107–108, 116–117
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 analyst has dealt fairly with all clients by sending them an e-mail and posting his rating change on the credit rating agency's website when making material changes to his prior investment recommendation; therefore, he has not violated Standard III (B) Fair Dealing. Clients should be treated fairly when material changes in a member's or candidate's prior investment recommendations are disseminated, which has been done.

12. Dorian Solot, CFA, is responsible for a team of research analysts at Apac Bank, located in a country with strict laws prohibiting intellectual property transfers. Solot believes the work of one of her analysts, Blaine Paddock, CFA, is not completed as carefully and thoroughly as it should be. Solot completely reviews all of Paddock's research and confirms her suspicions. Solot then confronts Paddock about his poor quality research and tells him he can leave Apac voluntarily or be fired. Paddock chooses to leave the bank, walking out with his personal papers and research notes that were created prior to his joining Apac. Subsequently, Paddock uses this intellectual property to help establish a high-net-worth investment advisory firm. When a prospective client asks Paddock if he left Apac because of questions on the quality of his work, Paddock says it was to start his own business. Paddock *least likely* violated the CFA Institute Standards of Professional Conduct concerning his:

A. research.
B. intellectual property.
C. prospective client disclosure.

Answer = B

CFA Institute Standards
2012 Modular Level I, Vol. 1, pp. 19–20, 38–39, 107–108
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 analyst has not violated Standard I (A) Knowledge of the Law related to intellectual property because there is no indication the analyst was ignorant of, or has violated, any law related to intellectual property. Taking his personal papers and research notes would not be a violation of strict local laws on intellectual property transference because these documents were created by the analyst prior to his employment at Apac.

13. Oliver Opdyke, CFA, works for an independent research organization that does not manage any client money. In the course of his analysis of Red Ribbon Mining he hears rumors the president of Red Ribbon, Richard Leisberg, has recently been diagnosed with late stage Alzheimer's disease, a fact not publicly known. The final stage of Alzheimer's is when individuals lose the ability to respond to their environment, the ability to speak, and, ultimately, the ability to control movement. Leisberg is the charismatic founder of Red Ribbon, and under his leadership the company grew to become one of the largest in the industry. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, the *most* appropriate action for Opdyke is to:

A. immediately publish a sell recommendation for Red Ribbon Mining.
B. confirm the president's diagnosis before publishing his research report.
C. encourage Red Ribbon Mining management to disclose the president's medical condition.

Answer = C

CFA Institute Standards
2012 Modular Level I, Vol. 1, pp. 49–52
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 members and candidates should make reasonable efforts to achieve public dissemination of information that is material and nonpublic, as required by Standard II (A) Material Nonpublic Information. This effort usually entails encouraging the issuer company to make the information public. In this case, if the diagnosis is fact and not rumor, then this information is material and should be disclosed.

14. Raymond Ortiz, CFA, provides investment advice to high-net-worth investors. Ortiz has just completed an analysis of Continental Wheat, a manufacturer of wheat-based food products. He rated the company a long-term hold for investors seeking growth and income. Ortiz's analysis included a review of the company's management team, financial data, pro forma financial positions, dividends and dividend policy, and a comparison of Continental with its competitors. Although he does not tell anyone, five years ago, Ortiz worked for and managed the commodities derivatives trading unit of Continental. As part of his compensation at Continental, he received stock, which he still owns. Based upon his research, Ortiz recommends Continental to clients who have a moderate risk tolerance. Two weeks later Continental announces its quarterly earnings are 30% less than a year ago. Consequently, shares of Continental drop by 50%. Ortiz *most likely* violated the CFA Institute Code of Ethics and Standards of Professional Conduct related to his stock:

A. research.
B. ownership.
C. recommendation.

Answer = B

CFA Institute Standards
2012 Modular Level I, Vol. 1, pp. 107–108, 123–126
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 there is a violation of Standard VI (A) Disclosure of Conflicts; the analyst worked for Continental and still has ties to the company in the form of his stock ownership.

15. Carolina Ochoa, CFA, is the chief financial officer at Pantagonia Computing. Ochoa is currently the subject of an inquiry by Pantagonia's corporate investigations department. The inquiry is the result of an anonymous complaint accusing Ochoa of falsifying travel expenses for senior management related to a government contract. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, it is *most* appropriate for Ochoa to disclose the allegations:

A. on her Professional Conduct Statement.
B. to CFA Institute when the investigation concludes.
C. to CFA Institute if the allegations are proven correct.

Answer = A

CFA Institute Standards
2012 Modular Level I, Vol. 1, p. 8
Study Session 1-1-c
Explain the ethical responsibilities required by the Code and Standards, including the multiple sub-sections of each standard.

A is correct because members and candidates must self-disclose on the annual Professional Conduct Statement all matters that question their professional conduct, such as involvement in civil litigation or criminal investigations or being the subject of a written complaint.

16. Belen Zapata, CFA, is the owner of Kawah Investments. Kawah promises investors returns of up to 12% per year and claims to achieve this by investing in non-investment-grade bonds and other fixed income instruments. Over the next 12 months, bond market yields reach unprecedented lows and Zapata finds it impossible to achieve the returns she expected. No investments are ever made by Kawah, and clients are completely paid back all of their original investment. Zapata *most likely* violated the CFA Institute Standards of Professional Conduct because of the:

A. return of capital.
B. promised returns.
C. investment mandate.

Answer = B

CFA Institute Standards
2012 Modular Level I, Vol. 1, pp. 38–39
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 member has misrepresented the returns she could realistically achieve for her clients, violating Standard I (C), which prohibits members and candidates from guaranteeing clients any specific return on volatile investments.

17. Jan Loots, CFA, quit his job as a portfolio manager at an investment firm with whom he had a non-solicitation agreement he signed several years ago. Loots received permission to take his investment performance history with him and also took a copy of the firm's software-trading platform. Subsequently, Loots sent out messages on social media sites announcing he was looking for clients for his new investment management firm. Access to Loots' social media sites is restricted to friends, family, and former clients. Loots *least likely* violated the CFA Institute Standards of Professional Conduct concerning his:

A. trading software.
B. non-solicitation agreement.
C. investment performance history.

Answer = C

CFA Institute Standards
2012 Modular Level I, Vol. 1, pp. 90–93
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 portfolio manager received permission to use his investment performance history from his prior employer. The member violated his non-solicitation agreement by indicating his availability to new clients on several social media sites accessible by clients of his former employer, a violation of Standard IV(A) Loyalty, because he did not act for the benefit of his former employer. In this case, the member may cause harm to his former employer if his weekend messages result in clients moving to his new business from his former employer. The member also violated this standard by taking his employer's property, trading software.

18. Chan Liu, CFA, is the new research manager at the Pacific MicroCap Fund. Liu observed the following activities after she published a research report on a thinly traded micro cap stock that included a "buy" recommendation:
    - Pacific traders purchased the stock for Pacific's proprietary account and then purchased the same stock for all client accounts; and
    - Pacific marketing department employees disseminated positive, but false, information about this stock in widely read Internet forums.

    Liu notes the stock's price increased more than 50% within a period of two days and was then sold for Pacific's account. Which of the following steps is *most* appropriate for Liu to take to avoid violating the CFA Institute Code of Ethics and Standards of Professional Conduct?

    A. Report the observed activities to her employer.
    B. Remove her name from the micro cap stock research report.
    C. Publicly refute the false information posted on Internet forums.

    Answer = A

    CFA Institute Standards
    2012 Modular Level I, Vol. 1, pp. 19–21, 59, 131
    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 certain staff at Liu's employer appear to be engaged in front running, a violation of Standard VI (B) Priority of Transactions, and market manipulation, a violation of Standard II (B) Market Manipulation. If Liu observes these violations without taking steps to notify her employer, she will be in violation of Standard I (A) Knowledge of the Law. Liu should know that the conduct observed is likely a violation of applicable laws, rules, and regulations and is a violation of the CFA Institute Code and Standards. Her first step, therefore, should be to attempt to stop the behavior by bringing it to the attention of the employer through a supervisor or the firm's compliance department. Inaction may be construed as participation or assistance in the illegal or unethical conduct.

Questions 19 through 32 relate to Quantitative Methods

19. An analyst has established the following prior probabilities regarding a company's next quarter's earnings per share (EPS) exceeding, equaling, or being below the consensus estimate.

	Prior probabilities
EPS exceed consensus	25%
EPS equal consensus	55%
EPS are less than consensus	20%

Several days before releasing its earnings statement, the company announces a cut in its dividend. Given this information, the analyst revises his opinion regarding the likelihood that the company will have EPS below the consensus estimate. He estimates the likelihoods the company will cut the dividend given that EPS exceed/meet/fall below consensus as reported below.

	Probabilities the company cuts dividends conditional on EPS exceeding/equaling/falling below consensus
P(Cut div|EPS exceed)	5%
P(Cut div|EPS equal)	10%
P(Cut div|EPS below)	85%

Bayes' formula:

Updated probability of event given the new information

$$= \frac{Probability\ of\ the\ new\ information\ given\ event}{Unconditional\ probability\ of\ the\ new\ information} \times Prior\ probability\ of\ event$$

Using Bayes' formula (given above), the updated (posterior) probability that the company's EPS are below the consensus is *closest* to:

A. 24%.
B. 72%.
C. 85%.

Answer = B

"Probability Concepts," Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
2012 Modular Level I, Vol. 1, pp. 467–471
Study Session 2-8-n
Calculate and interpret an updated probability using Bayes' formula.

B is correct. First, calculate the unconditional probability for a cut in dividends:

P(Cut div) = P(Cut div|EPS exceed) × P(EPS exceed)
+ P(Cut div|EPS equal) × P(EPS equal)

+ P(Cut div | EPS below) × P(EPS below)
= 0.05 × 0.25 + 0.10 × 0.55 + 0.85 × 0.20 = 0.2375.

Then update the probability of EPS falling below the consensus as:

P(EPS below | Cut div) = [P(Cut div | EPS below) ÷ P(Cut div)] × P(EPS below)
= [0.85 ÷ 0.2375] × 0.20 = 0.71579 ~ 72%.

20. If the distribution of the population from which the samples are drawn is positively skewed, and given that the sample size is large, the sampling distribution of the sample means is *most likely*:

A. approximately normally distributed.
B. to have a variance equal to that of the entire population.
C. to have a mean smaller than the mean of the entire population.

Answer = A

"Sampling and Estimation," Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
2012 Modular Level I, Vol. 1, pp. 556–559
Study Session 3-10-e
Explain the central limit theorem and its importance.

A is correct. The central limit theorem establishes that the sampling distribution of sample means will be approximately normal, will have a mean equal to the population mean, and will have a variance equal to the population variance divided by the sample size.

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

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

The appropriate discount rate to use in evaluating the project is 8%. The NPV (in €) of the project is *closest* to:

A. –1,780.
B. –1,736.
C. –922.

Answer = A

"Discounted Cash Flow Applications," Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
2012 Modular Level I, Vol. 1, pp. 312–314
"Capital Budgeting," John Stowe and Jacques R. Gagne
2012 Modular Level I, Vol. 4, pp. 10–11
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).

A is correct. Enter the given cash flows and the given discount rate into a financial calculator and solve for NPV. $CF_0 = -12{,}500$, $CF_1 = 2{,}000$, $CF_2 = 4{,}000$, $CF_3 = 5{,}000$, $CF_4 = 2{,}000$, i = 8%. Compute PV. The NPV is –1,780.
Alternatively, solve the following: $-12{,}500 + (2{,}000 \div 1.08) + (4{,}000 \div 1.08^2) + (5{,}000 \div 1.08^3) + (2{,}000 \div 1.08^4) = -1779.57$.

22. Given the following portfolio data, the portfolio return is *closest* to:

Asset class	Asset allocation (weight) (%)	Asset class return (%)	Correlation with equities class (%)
Equities	45	16	100
Mortgages	25	12	30
Cash and equivalents	30	2	10

A. 8.2%.
B. 10.0%.
C. 10.8%.

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, pp. 366–369
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.

C is correct. The portfolio return is the weighted mean return and is calculated as:
$0.45 \times 16 + 0.25 \times 12 + 0.30 \times 2 = 10.80$.

23. Given the following information about three portfolios:

Portfolio	**Mean return on the portfolio (%)**	**Standard deviation of the return on the portfolio (%)**
A	10	20
B	18	15
C	6	3

If the risk-free rate is 4%, which portfolio has the *highest* Sharpe ratio?

A. Portfolio A
B. Portfolio B
C. Portfolio C

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, pp. 396–399
Study Session 2-7-i
Calculate and interpret the coefficient of variation and the Sharpe ratio.

B is correct. The Sharpe ratio is defined as $S_p = (R_p - R_F)/s_p$.
In this case, $S_A = (10 - 4)/20 = 0.30$
$S_B = (18 - 4)/15 = 0.9333$
$S_C = (6 - 4)/3 = 0.6667$
Portfolio B has the highest Sharpe ratio.

24. If two events, A and B, are independent and the probability of A does not equal the probability of B (i.e., P(A) ≠ P(B)), then the probability of event A given that event B has occurred (i.e., P(A|B)) is *best* described as:

A. P(A).
B. P(B).
C. P(B|A).

Answer = A

"Probability Concepts," Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
2012 Modular Level I, Vol. 1, p. 445
Study Session 2-8-g
Distinguish between dependent and independent events.

A is correct. Two events, A and B, are independent if and only if P(A|B) = P(A) or, equivalently, P(B|A) = P(B). The wording of the question precludes P(A) = P(B); therefore, responses B and C cannot be correct.

25. Assume that the real risk-free rate of return is 3% and that the expected inflation premium is 5%. If the risk premium incorporates default risk, liquidity risk, and any maturity premium, an observed (nominal) interest rate of 12% implies that the risk premium is *closest* to:

A. 4%.
B. 8%.
C. 10%.

Answer = A

"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. 256–258
Study Session 2-5-b
Explain an interest rate as the sum of a real risk-free rate, expected inflation, and premiums that compensate investors for distinct types of risk.

A is correct. The nominal rate = real risk-free rate of return + an inflation premium + risk premiums (default, liquidity, maturity preference).
In this case, 12 = 3 + 5 + X. Solve for X. X = 4.

26. When considering two mutually exclusive capital budgeting projects with conflicting rankings (one has the higher positive NPV, the other has a higher IRR), the *most* appropriate conclusion is to choose the project with the:

A. higher IRR.
B. higher NPV.
C. shorter payback.

Answer = B

"Discounted Cash Flow Applications," Richard A. Defusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
2012 Modular Level I, Vol. 1, p. 318
"Capital Budgeting," John D. Stowe and Jacques R. Gagne
2012 Modular Level I, Vol. 4, pp. 13–15
Study Session 2-6-b, 11-36-d, e
Contrast the NPV rule to the IRR rule, and identify problems associated with the IRR rule.
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).
Explain NPV profile, compare the NPV and IRR methods when evaluating independent and mutually exclusive projects, and describe the problems associated with each of the evaluation methods.

B is correct. As stated in the reading (Vol. 1, p. 318):

> "When the IRR and NPV rules conflict in ranking projects, we should take directions from the NPV rule. Why that preference? The NPV of an investment represents the expected addition to shareholder wealth from an investment, and we take the maximization of shareholder wealth to be a basic financial objective of a company."

Note also that payback suffers from severe deficiencies as a decision tool (see Vol. 4, p. 15).

27. A low price range in which buying activity is sufficient to stop a price decline is *best* described as:

    A. support.
    B. resistance.
    C. change in polarity.

    Answer = A

    "Technical Analysis," Barry M. Sine and Robert A. Strong
    2012 Modular Level I, Vol. 1, pp. 660–663
    Study Session 3-12-c
    Demonstrate the uses of trend, support, and resistance lines and change in polarity.

    A is correct. Support is defined as a low price range in which buying activity is sufficient to stop the decline in price.

28. An investor purchases one share of stock for $85. Exactly one year later, the company pays a dividend of $2.00 per share. This is followed by two more annual dividends of $2.25 and $2.75 in successive years. Upon receiving the third dividend, the investor sells the share for $100. The money-weighted rate of return on this investment is *closest* to:

    A. 7.97%.
    B. 8.15%.
    C. 8.63%.

    Answer = B

    "Discounted Cash Flow Applications," Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
    2012 Modular Level I, Vol. 1, pp. 320–321
    Study Session 2-6-d
    Calculate, interpret, and distinguish between the money-weighted and time-weighted rates of return of a portfolio, and evaluate the performance of portfolios based on these measures.

    B is correct. The money-weighted rate of return is the internal rate of return (IRR) of the cash flows associated with the investment. Use the cash flow (CF) function of a financial calculator and enter CF_0 = –85, CF_1 = 2, CF_2 = 2.25, and CF_3 = 102.75. Calculate the IRR. The answer is 8.15%.

29. Independent samples drawn from normally distributed populations exhibit the following characteristics:

Sample	Size	Sample mean	Sample standard deviation
A	25	200	45
B	18	185	60

Assuming that the variances of the underlying populations are equal, the pooled estimate of the sample variance is 2,678.05. The *t*-test statistic appropriate to test the hypothesis that the two population means are equal is *closest* to:

A. 0.29.
B. 0.94.
C. 1.90.

Answer = B

"Hypothesis Testing," Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
2012 Modular Level I, Vol. 1, pp. 608–612
Study Session 3-11-g
Identify the appropriate test statistic and interpret the results for a hypothesis test concerning the equality of the population means of two at least approximately normally distributed populations, based on independent random samples with (1) equal or (2) unequal assumed variances.

B is correct. The *t* statistic for the given information (normal populations, variances assumed equal) is calculated as:

$$t = \frac{(\overline{X}_1 - \overline{X}_2) - (\mu_1 - \mu_2)}{\left(\frac{s_p^2}{n_1} + \frac{s_p^2}{n_2}\right)^{0.5}}$$

where

$$s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

In this case we have:

$$s_p^2 = \frac{(25-1)45^2 + (18-1)60^2}{25 + 18 - 2} = 2678.04878$$

$$t = \frac{(200 - 185) - (0)}{\left(\frac{2678.04878}{25} + \frac{2678.04878}{18}\right)^{0.5}} = 0.9377$$

30. Which of the following *most* accurately describes how to standardize a random variable X?

A. Subtract the mean of X from X, and then divide that result by the standard deviation of X.
B. Subtract the mean of X from X, and then divide that result by the standard deviation of the standard normal distribution.
C. Divide X by the difference between the standard deviation of X and the standard deviation of the standard normal distribution.

Answer = A

"Common Probability Distributions," Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
2012 Modular Level I, Vol. 1, p. 516
Study Session 3-9-m
Define the standard normal distribution, explain how to standardize a random variable, and calculate and interpret probabilities using the standard normal distribution.

A is correct. There are two steps in standardizing a random variable X: Subtract the mean of X from X, and then divide that result by the standard deviation of X.

31. For planning purposes, an individual wants to be able to spend €80,000 per year, at the end of each year, for an anticipated 25 years in retirement. In order to fund this retirement account, he will make annual deposits of €6,608 at the end of each of his working years. What is the minimum number of such deposits he will need to make to fund his desired retirement? Use 6% interest compounded annually for all calculations.

A. 29 payments
B. 40 payments
C. 51 payments

Answer = B

"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. 290–292
Study Session 2-5-e, f
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.
Demonstrate the use of a time line in modeling and solving time value of money problems.

B is correct. Using a financial calculator, first calculate the needed funds at retirement:
N = 25, I/Y = 6, PMT = 80,000, FV = 0; calculate PV to be 1,022,668.
Then use 1,022,668 as the FV of the accumulation phase annuity as per:
I/Y = 6, PV = 0, PMT = 6,608, FV = 1,022,668; calculate N. N is 40.

32. A technical analyst has detected a price chart pattern with three segments. The left segment shows a decline followed by a reversal to the starting price level. The middle segment shows a more pronounced decline than in the first segment and again a reversal to near the starting price level. The third segment is roughly a mirror image of the first segment. This chart pattern is *most* accurately described as:

A. a triple bottom.
B. a head and shoulders.
C. an inverse head and shoulders.

Answer = C

"Technical Analysis," Barry M. Sine and Robert A. Strong
2012 Modular Level I, Vol. 1, pp. 666–668
Study Session 3-12-d
Identify and interpret common chart patterns.

C is correct. An inverse head and shoulders pattern consists of a left segment that shows a decline followed by a reversal to the starting price level, a middle segment that shows a more pronounced decline than in the first segment and again a reversal to near the starting price level, and a third segment that is roughly a mirror image of the first segment.

Questions 33 through 44 relate to Economics

33. Consumer surplus is *best* described as:

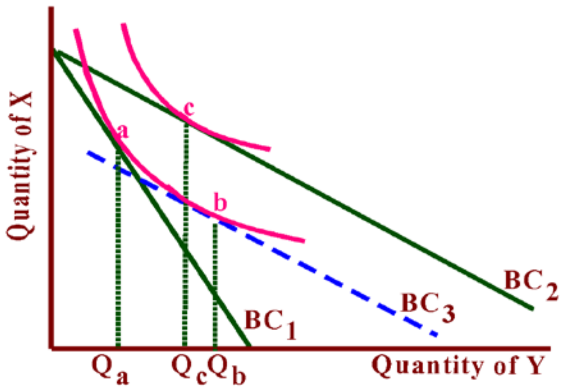
A. always less than or equal to zero.
B. always greater than or equal to zero.
C. at times positive and at other times negative.

Answer = B

"Demand and Supply Analysis: Introduction," Richard V. Eastin and Gary L. Arbogast
2012 Modular Level I, Vol. 2, pp. 31–33
Study Session 4-13-l
Calculate and interpret consumer surplus, producer surplus, and total surplus.

B is correct. Consumer surplus arises when one pays less for a good than the maximum price that she or he was willing to pay for it. Consumer surplus is the value (or marginal benefit) of a good minus the price paid for it, summed over the quantity bought. Because no consumer will (willingly) pay a price greater than the marginal value or benefit, consumer surplus is always positive.

34. The diagram illustrates a consumer's allocation of her budget between items X and Y. With an initial budget (BC_1) she consumes Q_a units of item Y. When the price of Y drops, she consumes Q_c units of item Y. Lines BC_2 and BC_3 are parallel to one another.



The income effect arising from this change in the price of Y is *best* described as the distance between:

A. Q_b and Q_a.
B. Q_c and Q_b.
C. Q_c and Q_a.

Answer = B

"Demand and Supply Analysis: Consumer Demand," Richard V. Eastin and Gary L. Arbogast
2012 Modular Level I, Vol. 2, pp. 89–90
Study Session 4-14-b, e, f
Describe the use of indifference curves, opportunity sets, and budget constraints in decision making.
Compare substitution and income effects.
Distinguish between normal goods and inferior goods, and explain Giffen goods and Veblen goods in this context.

B is correct. When the price of Y falls, the budget constraint shifts outward from BC_1 to BC_2, indicating an increase in the consumption of Y. Points a and b reflect the change in consumption of Y due solely to a decrease in price because BC_3 reduces her income by a sufficient amount to return her to her original indifference curve. $Q_c - Q_b$ is the income effect (which is negative here) because this is an inferior good.

35. If the minimum efficient scale of a single producer is small relative to the demand for an undifferentiated good, the market structure of the producer is *best* described as being:

A. an oligopoly.
B. perfect competition.
C. monopolistic competition.

Answer = B

"The Firm and Market Structures," Richard G. Fritz and Michele Gambera
2012 Modular Level I, Vol. 2, pp. 157–160
Study Session 4-16-a
Describe the characteristics of different market structures: perfect competition, monopolistic competition, oligopoly, and pure monopoly.

B is correct. Perfect competition involves the sale of a homogeneous product by many sellers; monopolistic competition may also involve many sellers, but its product involves differentiation.

36. In regard to the aggregate demand curve and an increase in one of its associated factors, which of the following relationships is *least* accurate?

	Increase in factor	**Shifts the AD curve**	**Reason**
A.	Stock prices	Rightward	Lower investment
B.	Consumer confidence	Rightward	Higher consumption
C.	Exchange rate*	Leftward	Lower exports and higher imports
	*Exchange rate is foreign currency per unit of domestic currency		

Answer = A

"Aggregate Output, Prices, and Economic Growth," Paul R. Kutasovic and Richard G. Fritz
2012 Modular Level I, Vol. 2, pp. 247–254
Study Session 5-17-h
Describe the causes of shifts in and movements along aggregate demand and supply curves.

A is correct. If stock prices rise, the aggregate demand curve will shift to the right (increase in AD) because of higher consumption (wealth effect), not lower investments.

37. Holding the working-age population constant, if the labor force participation ratio declines while the number of people employed remains unchanged, the unemployment rate will *most likely*:

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

Answer = B

"Understanding Business Cycles," Michele Gambera, Milton Ezrati, and Bolong Cao
2012 Modular Level I, Vol. 2, pp. 322–324
Study Session 5-18-d
Explain the types of unemployment, and describe measures of unemployment.

B is correct. For a given working-age population, a decline in the labor force participation rate, often the result of an increase in discouraged workers, reduces the labor force. If the number of people employed remains the same while the labor force is smaller, the number of workers defined to be unemployed must be smaller and the unemployment rate lower.

The following example illustrates the direction of change:

	Initial case	**After change**
Working-age population	100	100
Labor force = Employed + Unemployed	60 + 20 = 80	60 + 15 = 75
Labor force participation rate	80%	75%
Unemployment rate	20/80 = 25%	15/75 = 20%

Labor force participation rate = Labor force ÷ Working age population.
Unemployment rate = Unemployed ÷ Labor force.

38. Which of the following statements is *most* accurate? For a country to gain from trade it *must* have:

A. an absolute advantage.
B. a comparative advantage.
C. economies of scale or lower labor costs.

Answer = B

"International Trade and Capital Flows," Usha Nair-Reichert and Daniel Robert Witschi
2012 Modular Level I, Vol. 2, pp. 444–450
Study Session 6-20-b
Distinguish between comparative advantage and absolute advantage.

B is correct. A comparative advantage arises if one entity can produce an item at a lower opportunity cost than another. An absolute advantage in producing a good (or service) arises if one entity can produce that good at a lower cost or use fewer resources in its production than its trading partner. Even if a country does not have an absolute advantage in producing any of its goods, it can still gain from trade by exporting the goods in which it has a comparative advantage. The country with the lower opportunity cost (with the comparative advantage) should specialize and produce its low opportunity cost item, and the other country should produce the high opportunity cost item, trading the goods between each other to make both better off.

39. The following equations have been developed for a company:

Demand curve	$P = 150 - 5 \times Q$
Total revenue curve	$TR = 150 \times Q - 5 \times Q^2$
Marginal revenue curve	$MR = 150 - 10 \times Q$
Total cost curve	$TC = Q^3 - 10 \times Q^2 + 73 \times Q + 120$
Average cost curve	$AC = Q^2 - 10 \times Q + 73 + 120/Q$
Marginal cost curve	$MC = 3 \times Q^2 - 20 \times Q + 73$
P: price per unit Q: cost per unit	

The profit maximizing output for this firm (in units) is *closest* to:

A. 7.
B. 8.
C. 11.

Answer = A

"The Firm and Market Structures," Richard G. Fritz and Michele Gambera
2012 Modular Level I, Vol. 2, pp. 176–179
Study Session 4-16-b, c, d
Explain the relationships between price, marginal revenue, marginal cost, economic profit, and the elasticity of demand under each market structure.
Describe the firm's supply function under each market structure.
Describe and determine the profit-maximizing price and output for firms under each market structure.

A is correct. The profit-maximizing output will arise when MR = MC.
$MR = 150 - 10 \times Q = MC = 3 \times Q^2 - 20 \times Q + 73$.
On reduction, this becomes: $3 \times Q^2 - 10 \times Q - 77 = 0$.
Only with **Q = 7** will this equation be satisfied: $3 \times 7^2 - 10 \times 7 - 77 = 0$.

Alternatively, net profit under each alternative can be compared:

Units	Marginal revenue	Marginal cost	TR	TC	Net Profit
7	150 – 10 × 7 = **80**	$3 \times 7^2 - 20 \times 7 + 73 =$ **80**	805	484	**321**
8	150 – 10 × 8 = 70	$3 \times 8^2 - 20 \times 8 + 73 = 105$	880	576	304
11	150 – 10 × 11 = 40	$3 \times 11^2 - 20 \times 11 + 73 = 216$	1045	1045	0

40. Which of the following government interventions in market forces is *most likely* to cause overproduction?

A. Price floors
B. Price ceilings
C. Imposing an additional per-unit tax of $1 on sellers

Answer = A

"Demand and Supply Analysis: Introduction," Richard V. Eastin and Gary L. Arbogast
2012 Modular Level I, Vol. 2, pp. 37–44
Study Session 4-13-k
Forecast the effect of the introduction and removal of a market interference (e.g., a price floor or ceiling) on price and quantity.

A is correct. Price floors lead to overproduction.

41. In an effort to influence the economy, a central bank conducted open market activities by selling government bonds. This implies that the central bank is *most likely* attempting to:

A. contract the economy by reducing bank reserves.
B. expand the economy through a lower policy interest rate.
C. contract the economy through a lower policy interest rate.

Answer = A

"Monetary and Fiscal Policy," Andrew Clare and Stephen Thomas
2012 Modular Level I, Vol. 2, pp. 378–379
Study Session 5-19-f, h, i
Describe the implementation of monetary policy.
Explain the relationships between monetary policy and economic growth, inflation, interest, and exchange rates.
Determine whether a monetary policy is expansionary or contractionary.

A is correct. Selling government bonds results in a reduction of banks' reserves and reduces banks' ability to lend, causing a decline in money growth through the multiplier mechanism and hence leading to a contraction in the economy.

42. Consider two countries, A and B. Country A is a closed country with a relative abundance of labor and holds a comparative advantage in the production of textiles. Country B has a relative abundance of capital. When the textile trade is opened between the two countries, Country A will *most likely* experience a favorable impact on:

A. labor.
B. capital.
C. both capital and labor.

Answer = A

"International Trade and Capital Flows," Usha Nair-Reichert and Daniel Robert Witschi
2012 Modular Level I, Vol. 2, pp. 450–452
Study Session 6-20-b, c, d
Distinguish between comparative advantage and absolute advantage.
Explain the Ricardian and Heckscher–Ohlin models of trade and the source(s) of comparative advantage in each model.
Compare types of trade and capital restrictions and their economic implications.

A is correct. As a country opens up to trade, the benefit accrues to the abundant factor, which is labor in Country A.

43. Four countries operate within a customs union. One country proposes moving to a common market structure. What additional level of economic integration between the countries would *most likely* arise if this change took place? They would:

A. establish common trade barriers against non-members.
B. begin to allow free movement of the factors of production.
C. establish common economic institutions and coordination of economic policies.

Answer = B

"International Trade and Capital Flows," Usha Nair-Reichert and Daniel Robert Witschi
2012 Modular Level I, Vol. 2, pp. 459–460
Study Session 6-20-e
Explain motivations for and advantages of trading blocs, common markets, and economic unions.

B is correct. A common market structure incorporates all aspects of the customs union and extends it by allowing free movement of factors of production among members.

44. The current spot rate for the USD/EUR is 0.7500. The forward rate for the EUR/Australian dollar (AUD) is 1.4300, which represents a 400 point forward premium to the spot rate (scaled up by four decimal places). The USD/AUD spot rate is *closest* to:

A. 1.0296.
B. 1.0425.
C. 1.1154.

Answer = B

"Currency Exchange Rates," William A. Barker, Paul D. McNelis, and Jerry Nickelsburg
2012 Modular Level I, Vol. 2, pp. 521–523, 525–526
Study Session 6-21-e, f
Calculate and interpret currency cross-rates.

Convert forward quotations expressed on a points basis or in percentage terms into an outright forward quotation.

B is correct.

Step 1:	Find the spot rate for the EUR/AUD	
	Spot = Forward rate – Points	$\text{Spot} = 1.4300 - \frac{400}{10{,}000} = \mathbf{1.3900}$
Step 2:	**Calculate cross-rate**	
	$\frac{\text{USD}}{\text{AUD}} = \frac{\text{USD}}{\text{EUR}} \text{ x } \frac{\text{EUR}}{\text{AUD}}$	$\frac{\text{USD}}{\text{AUD}} = 0.7500 \text{ x } 1.3900 = \mathbf{1.0425}$

Questions 45 through 68 relate to Financial Statement Analysis

45. Which of the following is *least likely* to appear in a company's proxy statement?

A. Compensation arrangements for management and directors
B. Significant events and contingencies that may affect future operations
C. Potential conflicts of interest between management, directors, and shareholders

Answer = B

"Financial Statement Analysis: An Introduction," Elaine Henry and Thomas R. Robinson
2012 Modular Level I, Vol. 3, pp. 27, 31
Study Session: 7-22-c, e
Describe the importance of financial statement notes and supplementary information—including disclosures of accounting policies, methods, and estimates—and management's commentary.
Identify and explain information sources that analysts use in financial statement analysis besides annual financial statements and supplementary information.

B is correct. Significant events, conditions, trends, and contingencies that may affect future operations are contained in the Management's Discussion and Analysis. Compensation agreements for directors and management and their potential conflicts of interest are required in the proxy statement.

46. At the start of the year, a company's capital contributed by owners and retained earnings accounts had balances of $10,000 and $6,000, respectively. During the year, the following events took place:

Net income earned	$4,000
Interest paid on debt	$ 500
Repayment of long-term debt	$1,000
Proceeds from shares issued	$1,000
Dividends paid	$ 600

The end of year owners' equity is *closest* to:

A. $19,400.
B. $19,900.
C. $20,400.

Answer = C

"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. 46–51
Study Session: 7-23-b, e
Explain the accounting equation in its basic and expanded forms.
Explain the relationships among the income statement, balance sheet, statement of cash flows, and statement of owners' equity.

C is correct.

Start of year capital contributed by owners		$10,000
Additional shares issued		1,000
Initial retained earnings		6,000
Net income	4,000	
Dividends paid	(600)	
Increase in retained earnings	3,400	3,400
Ending owners' equity		**$20,400**

47. A retailer provides credit cards only to its most valued customers who pass a rigorous credit check. A credit card customer ordered an item from the retailer in May. The item was shipped and delivered in July. The item appeared on the customer's July credit card statement and was paid in full by the due date in August. The *most* appropriate month in which the retailer should recognize the revenue is:

A. May.
B. July.
C. August.

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.

B is correct. The appropriate time to recognize revenue would be in the month of July; the risks and rewards have been transferred to the buyer (shipped and delivered), the revenue can be reliably measured, and it is probable that the economic benefits will flow to the seller (the rigorous credit check was completed). Neither the actual payment date nor the credit card statement date is relevant here.

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

Selected Income Statement Data
for the year ended December 31st
(Can $ thousands)

	2011
Sales	$2,240,000
Cost of goods sold	1,320,000
Gross profit	920,000
Net Income	$316,600

Selected Balance Sheet Data
as of December 31st
(Can $ thousands)

	2011	**2010**
Assets		
Cash & investments	$210,700	$191,600
Accounts receivable	212,800	201,900
Inventories	63,000	71,500
Total current assets	$486,500	$465,000
Liabilities		
Accounts payable	$129,600	$157,200
Other current liabilities	130,700	182,700
Total current liabilities	$260,300	$339,900

The company operates in an industry in which suppliers offer terms of 2/10, net 30. The payables turnover for the average company in the industry is 8.5 times. Which of the following statements is *most* accurate? In 2011, the company on average:

A. took advantage of early payment discounts.
B. paid its accounts within the payment terms provided.
C. paid its accounts more promptly than the average firm in the industry.

Answer = C

"Financial Analysis Techniques," Elaine Henry, Thomas R. Robinson, and Jan Hendrik van Greuning
2012 Modular Level I, Vol. 3, pp. 352, 356
"Working Capital Management," Edgar A. Norton, Jr., Kenneth L. Parkinson, and Pamela Peterson Drake
2012 Modular Level I, Vol. 4, p. 164
Study Session 8-28-b, 11-40-f
Classify, calculate, and interpret activity, liquidity, solvency, profitability, and valuation ratios.

Evaluate a company's management of accounts receivable, inventory, and accounts payable over time and compared with peer companies.

C is correct.

Payables turnover = Purchases ÷ Average payables = 1,311,500 ÷ 143,400 = **9.15 times**	
Where:	
Purchases = COGS + End inventory – Beginning inventory = 1,320,000 + (63,000 – 71,500) = 1,311,500	
Average payables = ½ × (129,600 + 157,200) = 143,400	
Days in payables = 365 ÷ Payables turnover ratio	
Firm: 365 days ÷ 9.15 = 39.9 days	**Industry: 365 days ÷ 8.5 times = 42.9 days**

The firm's days in payables is 39.9 days; therefore, it appears the firm does not normally take supplier-provided discounts (paying in 10 days) nor pay its accounts within the 30-day terms provided. However, on average, the firm is paying faster than the average firm in the industry (42.9 days).

49. Which of the following will *most likely* result in an increase in a company's sustainable growth rate?

A. Higher tax burden ratio
B. Lower interest burden ratio
C. Higher dividend payout ratio

Answer = A

"Financial Analysis Techniques," Elaine Henry, Thomas R. Robinson, and Jan Hendrik van Greuning
2012 Modular Level I, Vol. 3, pp. 374–379, 380–381, 383
"Cost of Capital," Yves Courtois, Gene C. Lai, and Pamela Peterson Drake
2012 Modular Level I, Vol. 4, p. 57
Study Session 8-28-c, d, e, 11-37-h
Describe the relationships among ratios, and evaluate a company using ratio analysis.
Demonstrate the application of the DuPont analysis of the return on equity, and calculate and interpret the effect of changes in its components.
Calculate and interpret ratios used in equity analysis, credit analysis, and segment analysis.
Calculate and interpret the cost of equity capital using the capital asset pricing model approach, the dividend discount model approach, and the bond-yield-plus risk-premium approach.

A is correct.
Sustainable growth rate = Retention ratio × ROE.
The higher a company's ROE and its ability to finance itself from internally generated funds (a higher retention ratio), the greater its sustainable growth rate.
In the five-factor ROE, any factor that increases ROE will increase sustainable growth:

ROE = Tax burden × Interest burden × EBIT margin × Asset turnover × Leverage.

A higher tax burden ratio (Net income/Earnings before tax) implies that the company can keep a higher percentage of pretax profits; this implies a lower tax rate and a higher ROE. The interest burden ratio is earnings before tax to EBIT, and a lower ratio means that the company has higher borrowing costs (it gets to keep a lower pre-tax income from a given EBIT), implying a lower ROE and sustainable growth.

50. During 2010, the following events occurred at a company. The company:

1.	purchased a customer list for $100,000, which is expected to provide equal annual benefits for the next 4 years.
2.	recorded $200,000 of goodwill in the acquisition of a competitor. It is estimated that the acquisition would provide substantial benefits for the company for at least the next 10 years.
3.	spent $300,000 on media placements announcing the company had donated products and services to the community. The CEO believes the firm's reputation was enhanced substantially and the company will likely benefit from it for the next 5 years.

Based on those events, the amortization expense that the company should report in 2011 is *closest* to:

A. $25,000.
B. $45,000.
C. $85,000.

Answer = A

"Understanding Balance Sheets," Elaine Henry and Thomas R. Robinson
2012 Modular Level I, Vol. 3, pp. 236–241
Study Session: 8-26-e
Describe different types of assets and liabilities and the measurement bases of each.

A is correct. The customer list is the only identifiable intangible asset, and it should be amortized on a straight-line basis over its expected future life: $100,000 ÷ 4 = $25,000/year. Goodwill is an unidentifiable intangible and should be tested for impairment but not amortized. All advertising and promotion costs, such as the media placements, are typically expensed. If the reputation of the company has been enhanced as the CEO suggests, this is an internally generated intangible that is not recorded on the balance sheet and is therefore not amortized.

51. The following items are from a company's cash flow statement.

Classification of cash flow	**Description**	**Amount (£000s)**
Operating activities	Cash received from customers	55,000
Investing activities	Interest and dividends received	10,000
Financing activities	Net repayment of revolving credit loan	12,000

Which of the following standards and formats did the company *most likely* use in the preparation of its financial statements?

A. IFRS, direct format
B. IFRS, indirect format
C. Either IFRS or U.S. GAAP, direct format

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. 275–285
Study Session 8-27-c, d
Contrast cash flow statements prepared under International Financial Reporting Standards (IFRS) and U.S. generally accepted accounting principles (U.S. GAAP).
Distinguish between the direct and indirect methods of presenting cash from operating activities, and describe the arguments in favor of each method.

A is correct. The direct method of cash flow statement presentation shows the specific cash inflows and outflows that result in reported cash flow from operating activities (cash from customers, cash to suppliers, etc.). Companies using IFRS can decide to report interest and dividend receipts as either an investing or operating activity, whereas under U.S. GAAP, they must report such income as an operating activity. The listed operating and investment activities indicate that the company reports under IFRS, using the direct method.

52. The following information is available about a manufacturing company:

	$ million
Cost of ending inventory computed using FIFO	4.3
Net realizable value	4.1
Current replacement cost	3.8

If the company is using International Financial Reporting Standards (IFRS), instead of U.S. GAAP, its cost of goods sold ($ millions) is *most likely*:

A. the same.
B. 0.3 lower.
C. 0.3 higher.

Answer = A

"Inventories," Michael A. Broihahn
2012 Modular Level I, Vol. 3, pp. 416–418
Study Session: 9-29-f
Describe the measurement of inventory at the lower of cost and net realisable value.

A is correct. Under IFRS, the inventory would be written down to its net realizable value ($4.1 million), whereas under U.S. GAAP, market is defined as current replacement cost and hence would be written down to its current replacement cost ($3.8 million). The smaller write down under IFRS will reduce the amount charged to the cost of goods sold, as compared with U.S. GAAP, and result in a lower cost of goods sold of $0.3 million.

53. For which of the following assets is it *most* appropriate to test for impairment at least annually?

A. Land
B. A patent with a legal life of 20 years
C. A trademark with an expected indefinite life

Answer = C

"Understanding Balance Sheets," Elaine Henry and Thomas R. Robinson
2012 Modular Level I, Vol. 3, pp. 235–237
"Long-Lived Assets," Elaine Henry and Elizabeth A. Gordon
2012 Modular Level I, Vol. 3, pp. 465–466
Study Session: 8-26-e, 9-30-h
Describe different types of assets and liabilities and the measurement bases of each.
Explain the impairment of property, plant, and equipment and intangible assets.

C is correct. Intangible assets with indefinite lives need to be tested for impairment at least annually. PP&E (including land) and intangibles with finite lives are only tested if there has been a significant change or other indication of impairment.

54. On 1 January 2011 the market rate of interest on a company's bonds is 5% and it issues a bond with the following characteristics:

Face value	€50 million
Coupon rate, paid annually	4%
Time to maturity	10 years (31 December 2020)
Issue price (per €100)	92.28

If the company uses IFRS, its interest expense (in millions) in 2011 is *closest* to:

A. €1.846.
B. €2.307.
C. €2.386.

Answer = B

"Non-Current (Long-Term) Liabilities," Elizabeth A Gordon and Elaine Henry
2012 Modular Level I, Vol. 3, pp. 536–540
Study Session: 9-32-b
Describe the effective interest method and calculate interest expense, amortisation of bond discounts/premiums, and interest payments.

B is correct. IFRS requires the effective interest method for the amortization of bond discounts/premiums. The bond is issued for 0.9228 × €50 million = €46.140.
Interest expense = Liability value × Market rate at issuance: 0.05 × €46.140 = €2.307.

55. Given the following information about a company:

(€ millions)	**2011**	**2010**
Short-term borrowings	2,240	5,400
Current portion of long-term interest bearing debt	2,000	1,200
Long-term interest bearing debt	12,000	9,000
Total shareholders' equity	23,250	21,175
EBIT	3,850	3,800
Interest payments	855	837
Operating lease payments	800	800

What is the *most* appropriate conclusion an analyst can make about the solvency of the company? Solvency has:

A. improved because the debt-to-equity ratio decreased.
B. deteriorated because the debt-to-equity ratio increased.
C. improved because the fixed charge coverage ratio increased.

Answer = A

"Financial Analysis Techniques," Elaine Henry, Thomas R. Robinson, and Jan Hendrik van Greuning
2012 Modular Level I, Vol. 3, pp. 364–366
"Non-Current (Long-Term) Liabilities," Elizabeth A. Gordon and Elaine Henry
2012 Modular Level I, Vol. 3, pp. 574–575
Study Session: 8-28-b, 9-32-l
Classify, calculate, and interpret activity, liquidity, solvency, profitability, and valuation ratios.
Calculate and interpret leverage and coverage ratios.

A is correct. The debt–equity ratio decreased, thereby improving solvency; the fixed charge ratio remained the same.

	2011	**2010**	**Comments**
Debt-to-equity ratio (Total debt ÷ Equity)	$\frac{2{,}240 + 2{,}000 + 12{,}000}{23{,}250}$ = 70%	$\frac{5{,}400 + 1{,}200 + 9{,}000}{21{,}175}$ = 74%	Ratio decreased: Company has less financial risk; more solvent
Fixed charge coverage ratio = EBIT + Lease pmts Interest pmts + Lease pmts	$\frac{3{,}850 + 800}{855 + 800}$ = 2.81	$\frac{3{,}80 + 800}{837 + 800}$ = 2.81	No change in FCC ratio

56. Which of the following will *most likely* increase a company's operating cash flow? An increase in:

A. days sales payable (DSP).
B. gains on the sale of long-term assets.
C. use of operating leases versus financing leases.

Answer = A

"Non-Current (Long-Term) Liabilities," Elizabeth A. Gordon and Elaine Henry
2012 Modular Level I, Vol. 3, p. 569
"Accounting Shenanigans on the Cash Flow Statement," Marc A. Siegel
2012 Modular Level I, Vol. 3, pp. 610–611
Study Session: 9-32-i, 10-34
Compare the disclosures relating to finance and operating leases.
The candidate should be able to analyze and describe the following ways to manipulate the cash flow statement:
• stretching out payables,
• financing of payables,
• securitization of receivables, and

• using stock buybacks to offset dilution of earnings.

A is correct. An increase in the days sales payable would indicate the company is stretching out its payables, which would increase the cash from operations.

57. The *least likely* reason that a security analyst needs to understand the accounting process is to:

A. prevent earnings manipulation by management.
B. make adjustments to reflect items not reported in the financial statements.
C. aid in the assessment of management's judgment in accruals and valuations.

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. 76–78
Study Session: 7-23-g
Explain the use of the results of the accounting process in security analysis.

A is correct. Understanding the accounting process may assist an analyst in identifying earnings manipulation, but it will not prevent the manipulation of earnings by management. It is important for analysts to understand the accounting process so they can make adjustments for items not reported and to aid in the assessment of management's judgment of accruals and valuations.

58. What is the *most likely* effect on the accounting equation when a company purchases office equipment with cash?

A. Assets increase, and liabilities increase.
B. There is no effect on the accounting equation.
C. Assets decrease, and owners' equity decreases.

Answer = B

"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, p. 58
Study Session: 7-23-c
Explain the process of recording business transactions using an accounting system based on the accounting equation.

B is correct. There would be no effect on the accounting equation because the company has exchanged one asset for another. Cash has decreased, and office equipment, a capital asset, has increased.

59. Which of the following statements *best* describes the role of the International Organization of Securities Commissions (IOSCO)? The IOSCO:

A. is responsible for regulating financial markets of member nations.
B. is the oversight body to which the International Accounting Standards Board (IASB) reports.
C. assists in attaining the goal of cross-border cooperation in combating violations of securities laws.

Answer = C

"Financial Reporting Standards," Elaine Henry, Jan Hendrik van Greuning, and Thomas R. Robinson
2012 Modular Level I, Vol. 3, pp. 111–112
Study Session: 7-24-b
Describe the roles and desirable attributes of financial reporting standard-setting bodies and regulatory authorities in establishing and enforcing reporting standards, and describe the role of the International Organization of Securities Commissions.

C is correct. The IOSCO is not a regulator of financial markets. To ensure consistent application of international financial standards, it is important to have uniform regulation and enforcement across national boundaries. IOSCO assists in attaining this goal of uniform regulation as well as cross-border cooperation in combating violations of securities and derivatives laws.

60. The following data are available for a company and its industry:

Company Common-Size Balance Sheet As at 31 December 2010	
Assets	**(%)**
Cash & Short-Term Investments	43.2
Accounts Receivable	9.4
Inventory	0.6
Total Current Assets	53.2
Net Property, Plant, and Equipment	3.9
Goodwill	40.0
Other Long-Term Assets	2.9
Total Assets	100.0
Liabilities and Shareholders' Equity	
Short-Term Debt	1.6
Accrued Liabilities and Accounts Payable	17.8
Total Current Liabilities	19.4
Long-Term Debt	20.1
Other Long-Term Liabilities	6.5
Total Liabilities	46.0
Total Stockholders' Equity	54.0
Total Liabilities & Shareholders' Equity	100.0

Data for comparison	**Industry**
Current ratio	3.0
Debt-to-equity	50.0%
Long-term debt-to-equity	40.0%

Which of the following statements about the company is *most* appropriate? The company:

A. operates in the manufacturing industry.
B. has made significant acquisitions in the past.
C. has higher financial leverage than the industry.

Answer = B

"Understanding Balance Sheets," Elaine Henry and Thomas R. Robinson
2012 Modular Level I, Vol. 3, pp. 252–259
Study Session: 8-26-h
Convert balance sheets to common-size balance sheets, and interpret the common-size balance sheets.

B is correct. Goodwill makes up 40% of total assets; therefore, the company has made significant acquisitions at some point because goodwill is only recognized during acquisitions. Leverage is below the industry average for both the debt-to-equity ratio of 40% [(20.1 + 1.6) ÷ 54] versus the industry average of 50% and long-term debt-to-equity ratio of 37% [20.1 ÷ 54] versus the industry average of 40%. The low PP&E and inventory levels also indicate the company is not likely a manufacturer.

61. Which of the following is *least likely* a benefit of the direct method for reporting cash flow from operating activities? Compared with the indirect method, the direct method provides:

A. supplementary data under U.S. GAAP.
B. details on the specific sources of operating receipts and payments.
C. insight on differences between net income and operating cash flows.

Answer = C

“Understanding Cash Flow Statements,” Elaine Henry, Thomas R. Robinson, Jan Hendrik van Greuning, and Michael A. Broihahn
2012 Modular Level I, Vol. 3, pp. 277–283
Study Session: 8-27-d
Distinguish between the direct and indirect methods of presenting cash from operating activities, and describe the arguments in favor of each method.

C is correct. Providing insight on the differences between net income and cash flow is a benefit of the indirect method. The indirect method starts with net income and integrates a series of adjustments to calculate cash flow from operations.

62. A firm reported the following financial statement items:

Cash Flow Item	**(€)**
Net income	2,100
Non-cash charges	400
Interest expense	300
Capital expenditure	210
Working capital expenditures	0
Net borrowing	1,600
Tax rate	40%

The free cash flow to the firm is *closest* to:

A. €2,110.
B. €2,470.
C. €2,590.

Answer = B

“Understanding Cash Flow Statements,” Elaine Henry, Thomas R. Robinson, Jan Hendrik van Greuning, and Michael A. Broihahn
2012 Modular Level I, Vol. 3, pp. 312–313
Study Session: 8-27-i
Calculate and interpret free cash flow to the firm, free cash flow to equity, and performance and coverage cash flow ratios.

B is correct.

Cash Flow Item		**Amount (€)**
Net income		2,100
Plus non-cash charges		400
Plus interest expense (1 – Tax rate)	300 (1 – 0.40)	180
Less capital expenditure		(210)
Less working capital expenditures		0
FCFF		**€**2,470

63. An analyst gathers the following information about a company’s common stock:

- 1 January 2011 200,000 shares outstanding
- 1 June 2011 50,000 shares issued
- 1 August 2011 2 for 1 stock split
- 31 December 2011 500,000 shares outstanding

To calculate earnings per share for 2011, the company’s weighted average number of shares outstanding is *closest* to:

A. 333,333.
B. 350,000.
C. 458,333.

Answer = C

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

2012 Modular Level I, Vol. 3, pp. 189–190
Study Session 8-25-g
Describe how earnings per share is calculated, and calculate and interpret a company’s earnings per share (both basic and diluted earnings per share) for both simple and complex capital structures.

C is correct. The weighted average number of shares is determined by the length of time each quantity of shares was outstanding. A stock split is treated as if it occurred at the beginning of the year.

200,000 × 5/12 83,333

250,000 × 7/12	145,833
Total before split	229,166
Including effect of 2:1 split	458,333

64. To gain insight into what portion of the company's assets is liquid, an analyst will *most likely* use:

    A. the cash ratio.
    B. the current ratio.
    C. common-size balance sheets.

    Answer = C

    "Understanding Balance Sheets," Elaine Henry and Thomas R. Robinson
    2012 Modular Level I, Vol. 3, pp 252–253
    "Financial Analysis Techniques," Elaine Henry, Thomas R. Robinson, and Jan Hendrik van Greuning
    2012 Modular Level I, Vol. 3, pp. 341–342; 359
    Study Session 8-26-h, 8-28-b, c
    Convert balance sheets to common-size balance sheets, and interpret common-size balance sheets.
    Classify, calculate, and interpret activity, liquidity, solvency, profitability, and valuations ratios.
    Describe the relationships among ratios, and evaluate a company using ratio analysis.

    C is correct. A common-size balance sheet expresses all balance sheet accounts as a percentage of total assets and provides insight into what portion of a company's assets is liquid. In contrast, cash and current ratios measure liquidity relative to current liabilities, not relative to total assets.

65. A company's information from its first year of operation is as follows:

	2011	
Event	**Units**	**NZ$/unit**
Opening inventory	0	0
Purchase #1	1,000	$22.50
Purchase #2	800	$25.00
Purchase #3	400	$25.50
Sales	1,700	$40.00

    Using a periodic inventory system and the weighted average method, the ending inventory value is *closest* to:

    A. $11,975.
    B. $12,165.
    C. $12,700.

Answer = A

"Inventories," Michael A. Broihahn
2012 Modular Level I, Vol. 3, pp. 411–413
Study Session: 9-29-c
Calculate cost of sales and ending inventory using different inventory valuation methods, and explain the impact of the inventory valuation method choice on gross profit.

A is correct.

Ending Inventory Weighted Average Calculations

	Units	NZ$/unit	Total NZ$
Purchase #1	1,000	$22.50	$22,500
Purchase #2	800	$25.00	$20,000
Purchase #3	400	$25.50	$10,200
Total available	2,200		$52,700
Average cost	52,700 ÷ 2,200		$ 23.95
Ending inventory	2,200 – 1,700 = 500 units		$ 11,975

66. A company purchased equipment for $50,000 on 1 January 2009. It is depreciating the equipment over a period of 10 years on a straight-line basis for accounting purposes, but for tax purposes, it is using the declining balance method at a rate of 20%. Given a tax rate of 30%, the deferred tax liability as at the end of 2011 is *closest* to:

A. $420.
B. $2,820.
C. $6,720.

Answer = B

"Income Taxes," Elbie Antonites and Michael A. Broihahn
2012 Modular Level I, Vol. 3, pp. 493–495
Study Session: 9-31-c, d
Determine the tax base of a company's assets and liabilities.
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.

B is correct. The deferred tax liability is equal to the tax rate times the difference between the carrying amount of the asset and the tax base.

Value for accounting purposes after 3 years:	50,000 – [3 x (50,000 ÷ 10)]=	$35,000
Value for tax purposes:		
Carrying amount = Start of year balance × (1 – 0.20)		
After three years:	50,000 × 0.8 × 0.8 × 0.8 =	25,600
Difference between accounting and tax values		9,400
Deferred tax liability @ 30%:	30% × 9,400 =	2,820

67. An analyst is analyzing two companies in the same industry and believes that they have similar strategies regarding the use of property, plant, and equipment (PP&E). He also thinks that the PP&E assets of the two companies are roughly of the same age and have the same expected useful lives remaining. Company A uses the LIFO method of inventory valuation, and Company B uses the FIFO method. The following additional information is available from the companies' financial statements:

	$ millions	
	Company A	**Company B**
Current assets	5,800	6,300
Inventory LIFO reserve	1,100	N/A
Current liabilities	4,300	4,200
Gross PP&E	2,500	3,000
Accumulated depreciation	1,250	1,200
Depreciation expense	125	120

In the analyst's opinion, which of the following conclusions is *most* appropriate? Compared with Company A, Company B:

A. is more liquid.
B. has a higher quality of earnings.
C. uses more aggressive accounting estimates related to PP&E.

Answer = C

"Financial Reporting Quality: Red Flags and Accounting Warning Signs," Thomas R. Robinson and Paul Munter
2012 Modular Level I, Vol. 3, p. 595
"Financial Statement Analysis: Applications," Thomas R. Robinson, Jan Hendrik van Greuning, Elaine Henry, and Michael A. Broihahn
2012 Modular Level I, Vol. 3, pp. 645–650
Study Session: 10-33-b, 10-35-e
Describe activities that will result in a low quality of earnings.
Explain appropriate analyst adjustments to a company's financial statements to facilitate comparison with another company.

C is correct.

	Company A	**Company B**
Current ratio as reported (CA ÷ CL)	1.35	1.50
Current ratio adjusted to FIFO for Company A (5,800 + 1,100) ÷ 4,300	1.60	
	Co A is more liquid	
Net PPE	1,250	1,800
Estimated average remaining useful life (Net PPE ÷ Depreciation expense)	10 years	15 years

The analyst believes the two companies' PP&E are of the same age; however, the useful life remaining for Company B's assets is 15 years compared with 10 for Company A, implying B is using a longer useful life or more aggressive accounting policies.

The more aggressive PP&E estimates combined with the use of FIFO indicate that Company B has a lower quality of earnings, not higher. The adjusted current ratio for Company A (adjusted to include the LIFO reserve to convert the balance sheet to FIFO for comparison) is higher than the current ratio for B, indicating that A is more liquid.

68. An analyst has made three observations in his worksheets about a company that he is reviewing. Which of the observations *most likely* reduces the quality of earnings of the company? The company:

A. reported for the first time an asset titled "Deferred customer acquisition costs."
B. has reduced its estimate of the expected useful life of computer equipment from 8 years to 5 years.
C. entered into long-term leases for its manufacturing equipment instead of purchasing it and recorded the leases as capital leases.

Answer = A

"Financial Reporting Quality: Red Flags and Accounting Warning Signs," Thomas R. Robinson and Paul Munter
2012 Modular Level I, Vol. 3, pp. 594–595
Study Session 10-33-b, d
Describe activities that will result in a low quality of earnings.
Describe common accounting warning signs and methods for detecting each.

A is correct. An asset such as "deferred acquisition costs" could indicate the company is deferring current period expenses to future periods, which is a warning sign and an indication of lower quality earnings.

Questions 69 through 78 relate to Corporate Finance

69. A firm's estimated costs of debt, preferred stock, and common stock are 12%, 17%, and 20%, respectively. Assuming equal funding from each source and a 40% tax rate, the weighted average cost of capital is *closest* to:

A. 13.9%.
B. 14.7%.
C. 16.3%.

Answer = B

"Cost of Capital," Yves Courtois, Gene C. Lai, and Pamela Peterson Drake
2012 Modular Level I, Vol. 4, pp. 41–42
Study Session 11-37-a, b
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.

B is correct:
WACC = $w_d r_d (1 – t) + w_p r_p + w_e r_e$ = [0.12 × (1 – 0.40) + 0.17 + 0.20] ÷ 3 = 14.73%.

70. Which of the following is *most likely* considered an example of matrix pricing?

A. Debt-rating approach only
B. Yield-to-maturity approach only
C. Both the yield-to-maturity and the debt-rating approaches

Answer = A

"Cost of Capital," Yves Courtois, Gene C. Lai, and Pamela Peterson Drake
2012 Modular Level I, Vol. 4, pp. 48–49
Study Session 11-37-f
Calculate and interpret the cost of fixed rate debt capital using the yield-to-maturity approach and the debt-rating approach.

A is correct. The debt-rating approach is an example of matrix pricing. The yield-to-maturity approach is not an example of matrix pricing.

71. A project has the following annual cash flows:

Year 0	Year 1	Year 2	Year 3
–$606,061	$2,151,515	–$2,542,424	$1,000,000

Which discount rate *most likely* provides a positive net present value?

A. 15%
B. 18%
C. 21%

Answer = C

"Capital Budgeting," John D. Stowe and Jacques R. Gagne
2012 Modular Level I, Vol. 4, pp. 10–13, 17–19
Study Session 11-36-d, e
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).

Explain the NPV profile, compare the NPV and IRR methods when evaluating independent and mutually exclusive projects, and describe the problems associated with each of the evaluation methods.

C is correct.

Year	Cash Flow	K = 15%	K = 18%	K = 21%	Calculation
0	–606,061	–606,061.0	–606,061.0	–606,061.0	–606,061.0
1	2,151,515	1,870,882.6	1,823,317.8	1,778,111.6	+2,151,515 ÷ (1 + K)
2	–2,542,424	–1,922,437.8	–1,825,929.3	–1,736,509.8	–2,542,424 ÷ $(1 + K)^2$
3	1,000,000	657,516.2	608,630.9	564,473.9	+1,000,000 ÷ $(1 + K)^3$
	NPV	**–$100.0**	**–$41.7**	**+$14.7**	**K** = Discount rate

The NPV at 21% is $14.7; the other two NPVs are negative.

72. Based on a need to borrow $2 million for one month, which of the following alternatives has the *least* expensive effective annual cost?

A. A banker's acceptance with an all-inclusive annual rate of 6.1%
B. A credit line at 6.0% annually with a $4,000 annual commitment fee
C. Commercial paper at 5.9% annually with a dealer's annual commission of $1,500 and a backup line annual cost of $3,500

Answer = A

"Working Capital Management," Edgar A. Norton, Jr., Kenneth L. Parkinson, and Pamela Peterson Drake
2012 Modular Level I, Vol. 4, pp. 198–200
Study Session 11-40-g
Evaluate the choices of short-term funding available to a company, and recommend a financing method.

A is correct.

Method	Formula	Calculation		
BA	Interest x 12 / Net proceeds	Interest	0.061/12 × $2,000,000 = 10,166	
		Net proceeds	2,000,000 – 10,166 = 1,989,833	
		BA cost	(10,166 × 12) ÷ 1,989,833	**0.0613**
Line of credit	(Interest + Commitment fee) x 12 / Useable loan amount	Interest	0.06/12 × $2,000,000 = 10,000	
		Commitment fee	0.005/12 × $2,000,000 = 833	
		Useable loan	$2,000,000	
		LOC cost	(10,833 × 12) ÷ 2,000,000	**0.065**
CP		Interest	0.059/12 × $2,000,000 = 9,833	

	(Interest + Dealer's commission + Backup costs) x 12 Net proceeds	Dealer commission	$3,000/12 = 250	
		Backup costs	$4,000/12 = 333	
		Total costs	9,833 + 250 + 333 = 10,416	
		Net proceeds	2,000,000 – 9,833 = 1,990,167	
		CP cost	(10,416 × 12) ÷ 1,990,167	**0.0628**

Banker's acceptance has the lowest annual effective cost of 0.0613.

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

Income Statement	**$ millions**
Revenues	10.2
Variable Operating Costs	4.6
Fixed Operating Costs	2.0
Operating Income	3.6
Interest	1.2
Taxable Income	2.4
Tax	1.0
Net Income	1.4

A. 1.5.
B. 1.7.
C. 2.6.

Answer = A

"Measures of Leverage," Pamela Peterson Drake, Raj Aggarwal, Cynthia Harrington, and Adam Kobor
2012 Modular Level I, Vol. 4, pp. 103–105
Study Session 11-38-b
Calculate and interpret the degree of operating leverage, the degree of financial leverage, and the degree of total leverage.

A is correct. DFL = (Operating income) ÷ (Operating income – Interest expense)
or operating income divided by pretax earnings
= $3.6 ÷ ($3.6 – $1.2)
= 1.50.

74. The "per unit contribution margin" for a product is $12. Assuming fixed costs of $12,000, interest costs of $3,000, and taxes of $2,000, the operating breakeven point (in units) is *closest* to:

A. 1,000.
B. 1,250.
C. 1,417.

Answer = A

"Measures of Leverage," Pamela Peterson Drake, Raj Aggarwal, Cynthia Harrington, and Adam Kobor
2012 Modular Level I, Vol. 4, pp. 97–98, 110–113
Study Session 11-38-e
Calculate and interpret the operating breakeven quantity of sales.

A is correct. The operating breakeven point is:

$$\frac{fixed\ costs}{contribution\ margin} = \frac{\$12{,}000}{\$12} = 1{,}000$$

75. Which of the following capital budgeting techniques is *most* directly related to stock price?

A. Net present value
B. Profitability index
C. Discounted payback period

Answer = A

"Capital Budgeting," John D. Stowe and Jacques R. Gagne
2012 Modular Level I, Vol. 4, p. 27
Study Session 11-36-f, g
Describe and account for the relative popularity of the various capital budgeting methods, and explain the relation between NPV and company value and stock price.
Describe the expected relations among an investment's NPV, company value, and share price.

A is correct. From page 27:
"The NPV criterion is the criterion most directly related to stock prices. If a corporation invests in positive NPV projects, these should add to the wealth of its shareholders."

76. A company's data are furnished below:

Cost of debt	10%
Cost of equity	16%
Debt-to-equity ratio (D/E)	50%
Tax rate	30%

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

A. 11.5%.
B. 13.0%.
C. 14.0%.

Answer = B

“Cost of Capital,” Yves Courtois, Gene C. Lai, and Pamela Peterson Drake
2012 Modular Level I, Vol. 4, pp. 40–43
Study Session 11-37-a, b
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.

B is correct:

$$w_d = \frac{D/E}{1+D/E} = \frac{50\%}{1+50\%} = 33.3\%$$

$$w_e = 1 - w_d = 66.7\%$$

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

$$WACC = 33.3\% \times 10\% \times (1-30\%) + 66.7\% \times 16\% = 13.0\%$$

77. For a 90-day U.S. Treasury bill selling at a discount, which of the following methods *most likely* results in the highest yield?

A. Money market yield
B. Discount-basis yield
C. Bond equivalent yield

Answer = C

“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.

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

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

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

$$BEY = \frac{Face\ value - Purchase\ price}{Purchase\ price} \times \frac{365}{Days\ to\ maturity}$$

$BEY = MMY \times \frac{365}{360}, BEY > MMY > DBY$

78. In a sales-driven pro forma analysis, net income grows from $1.2 million to $1.26 million. Assuming a dividend payout ratio of 40%, the increase in retained earnings is *closest* to (in $ millions):

A. 0.720.
B. 0.756.
C. 1.260.

Answer = B

"Financial Statement Analysis," Pamela Peterson Drake
2012 Modular Level I, Vol. 4, p. 222
Study Session 11-41
The candidate should be able to demonstrate the use of pro forma income and balance sheet statements.

B is correct. The retained earnings in a pro forma analysis increases by net income less dividends:

$$Dividend = Net\ income \times Dividend\ payout\ ratio = \$1.26\ million \times 40\% = 0.504\ million$$

$$Increase\ in\ retained\ earnings = \$1.26\ million - \$0.504\ million = 0.756\ million$$

Or:

$$Increase\ in\ retained\ earnings = Net\ income \times [1 - Dividend\ payout\ ratio] = \$1.26\ million \times [1 - 40\%] = 0.756\ million$$

Questions 79 through 90 relate to Equity Investments

79. The index weighting that results in portfolio weights shifting away from securities that have increased in relative value (e.g., decrease in book-to-market) toward securities that have fallen in relative value whenever the portfolio is rebalanced is *most* accurately described as:

A. equal weighting.
B. fundamental weighting.
C. float-adjusted market-capitalization weighting.

Answer = B

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

B is correct. Fundamentally weighted indices generally will have a contrarian "effect" in that the portfolio weights will shift away from securities that have increased in relative value and toward securities that have fallen in relative value whenever the portfolio is rebalanced.

80. According to the industry life-cycle model, an industry in the shakeout stage is *best* characterized as experiencing:

A. slowing growth and intense competition.
B. little or no growth and industry consolidation.
C. relatively high barriers to entry and periodic price wars.

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. 234–235
Study Session 14-51-g
Describe product and industry life-cycle models, classify an industry as to life-cycle phase (e.g., embryonic, growth, shakeout, maturity, or decline) based on a description of it, and discuss the limitations of the life-cycle concept in forecasting industry performance.

A is correct. The shakeout stage is usually characterized by slowing growth, intense competition, and declining profitability. During the shakeout stage, demand approaches market saturation levels because few new customers are left to enter the market. Competition is intense as growth becomes increasingly dependent on market share gains.

81. An investor uses the data below and Gordon's constant growth dividend discount model to evaluate a company's common stock. To estimate growth, she uses the average value of the:

1) compounded annual growth rate over the period 2006–2011 and
2) sustainable growth rate for the year 2011.

Year	**EPS**	**DPS**	**ROE**
2011 2010	\$3.20	\$1.92	12%
2009 2008	\$3.60	\$1.85	17%
2007	\$2.44	\$1.74	13%
2006	\$2.08	\$1.62	15%
	\$2.76	\$1.35	11%
	\$2.25	\$1.25	9%

If her required return is 15%, the stock's intrinsic value is *closest* to:

A. \$23.71.
B. \$25.31.
C. \$30.14.

Answer = B

“Equity Valuation: Concepts and Basic Tools,” John J. Nagorniak and Stephen E. Wilcox
2012 Modular Level I, Vol. 5, pp. 279–281
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. $V_0 = D_1/(r – g)$.
Dividend growth rate over the period 2006–2011 = $1.25(1 + g)^5 = 1.92$; $g = 8.96\% \approx 9\%$.
Sustainable growth rate for the year 2011:
b = Earnings retention rate = (1 – Dividend payout ratio) = $[1 - \frac{1.92}{3.20}] = 0.40$
$g = b \times ROE$; $g = 0.40 \times 12\% = 4.8\%$
Average of the two approaches = $\frac{9+4.8}{2} = 6.90\%$.

$V_0 = D_1/(r – g) = \frac{1.92 \times 1.069}{0.15 - 0.069} = \frac{2.05}{0.081} = \$25.31$.

82. According to behavioral finance, observed overreaction in securities markets *most likely* occurs due to:

A. loss aversion.
B. gambler’s fallacy.
C. disposition effect.

Answer = A

“Market Efficiency,” W. Sean Cleary, Howard J. Atkinson, and Pamela Peterson Drake
2012 Modular Level I, Vol. 5, pp. 148–149
Study Session 13-49-g
Contrast the behavioral finance view of investor behavior with that of traditional finance.

A is correct. According to loss aversion related arguments in behavioral theories, investors dislike losses more than they like comparable gains. Thus, such a behavioral bias can explain observed overreaction in markets.

83. Companies pursuing cost leadership will *most likely*:

A. invest in productivity-improving capital equipment.
B. engage in defensive pricing when the competitive environment is one of high rivalry.
C. establish strong market research teams to match customer needs with product development.

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. 250–251
Study Session 14-51-k
Describe the elements that should be covered in a thorough company analysis.

A is correct. Companies pursuing cost leadership must be able to invest in productivity-improving capital equipment in order to be low-cost producers and maintain efficient operating systems.

84. The following data pertain to a margin purchase of a stock by an investor.

Stock's purchase price	\$50/share
Sale price	\$55/share
Shares purchased	500
Margin	45%
Call money rate	6%
Dividend	\$1.80/share
Transaction commission on purchase	\$0.05/share
Transaction commission on sale	\$0.05/share

If the stock is sold exactly one year after the purchase, the total return on the investor's investment is *closest* to:

A. 14%.
B. 19%.
C. 22%.

Answer = C

"Market Organization and Structure," Larry E. Harris
2012 Modular Level I, Vol. 5, pp. 44–45
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.

C is correct.

Proceeds on sale:	\$55 x 500	\$27,500
Less payoff loan:	\$50 x 500 x 0.55	–\$13,750
Less margin interest paid:	\$13,750 x 0.06	–\$825
Plus dividend received:	\$1.80 x 500	\$900
Less sales commission paid:	\$0.05 x 500	–\$25
= Remaining equity		\$13,800
Initial investment (including commission):	(\$50 x 500 x 0.45) + (\$0.05 x 500)	\$11,275
Return on the initial investment:	$\frac{(\$13,800 – \$11,275)}{\$11,275}$	22.4%

See Example 19 pp. 44–45.

85. A trader seeking to sell a very large block of stock, or a piece of urban real estate property, for her client will *most likely* execute the trade in a(n):

A. brokered market.
B. order-driven market.
C. quote-driven market.

Answer = A

"Market Organization and Structure," Larry E. Harris
2012 Modular Level I, Vol. 5, pp. 58–61
Study Session 13-47-j
Describe how securities, contracts, and currencies are traded in quote-driven markets, order-driven markets, and brokered markets.

A is correct. Instruments that are infrequently traded and expensive to carry as inventory (e.g., very large blocks of stock, real estate properties, fine art masterpieces, and liquor licenses) are executed in brokered markets. Organizing order-driven markets for such instruments is not sensible because too few traders would submit orders to them.

86. Accounting standards and reporting requirements that produce meaningful and timely financial disclosures are *most* critical for achieving which of the following efficiencies associated with a well-functioning financial system?

A. Operational
B. Allocational
C. Informational

Answer = C

"Market Organization and Structure," Larry E. Harris
2012 Modular Level I, Vol. 5, pp. 62–63
Study Session 13-47-k
Describe the characteristics of a well-functioning financial system.

C is correct. Accounting standards and reporting requirements that allow meaningful and timely financial disclosures reduce the costs of obtaining fundamental information and thereby allow analysts to form more accurate estimates of fundamental values. Liquid markets allow well-informed traders to fill their orders at low costs. Well-informed traders make prices informationally efficient.

87. Arbitrage activity will *most likely* be higher in securities markets:

A. that are efficient.
B. with no restrictions on short selling.
C. with high information-acquisition costs.

Answer = B

“Market Efficiency,” W. Sean Cleary, Howard J. Atkinson, and Pamela Peterson Drake
2012 Modular Level I, Vol. 5, pp. 130–134
Study Session 13-49-a, c
Explain market efficiency and related concepts, including their importance to investment practitioners.
Explain factors affecting a market’s efficiency.

B is correct. Short selling helps in price discovery. Arbitrageurs benefit from pricing discrepancies (inefficiencies); therefore, arbitrage activity will be higher in markets with no restrictions on short selling.

88. An analyst collects the following data on the return on equity (ROE) and the payout ratio for two companies, M and N. Using a required return of 12.4% for both companies, she computes the justified forward P/E ratios, which are also given below.

Company	**Return on equity (%)**	**Payout ratio (%)**	**Justified forward P/E**
M	12.0	30	7.5
N	14.0	40	10.0

If Company M increases its dividend payout ratio to 40% and Company N decreases its dividend payout ratio to 30%, which of the following will *most likely* occur? The justified P/E ratio of:

A. both companies would increase.
B. both companies would decrease.
C. Company M would increase but that of Company N would decrease.

Answer = A

“Equity Valuation: Concepts and Basic Tools,” John J. Nagorniak and Stephen E. Wilcox
2012 Modular Level I, Vol. 5, pp. 288–291
Study Session 14-52-g, h
Explain the rationale for using price multiples to value equity, and distinguish between multiples based on comparables versus multiples based on fundamentals.
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.

A is correct. Dividend growth rate = (1 – Payout ratio) × ROE;
Justified forward P/E: $P_0/E_1 = p/(r - g)$.
Using the new payout ratios, the justified forward P/Es, calculated below, of both firms would increase.
<u>Company M</u>:
New dividend growth rate = (1 – 0.4) x 12% = 7.2%;
New Justified forward P/E = 0.4/(0.124 – 0.072) = 7.7x.

Company N:
New dividend growth rate = (1 – 0.3) x 14% = 9.8%;
New Justified forward P/E = 0.3/(0.124 – 0.098) = 11.5x.

89. A fund manager gathers the following data in order to assess a stock's potential for a possible addition to her portfolio:

Company's net income	\$20 million
Company's equity at the beginning of the year	\$140 million
Company's weighted average cost of capital (WACC)	10.75%
Stock's beta	1.80
Market risk premium	5.25%
Risk-free rate	3.50%
Fund manager's required rate of return	13.60%

Which of the following is the *most* appropriate decision for the fund manager?

A. Do not invest in the stock.
B. Invest in the stock because the company's ROE is greater than the required rate of return.
C. Invest in the stock because the required rate of return is greater than the company's WACC.

Answer = A

"Cost of Capital," Yves Courtois, Gene C. Lai, and Pamela Peterson Drake
2012 Modular Level I, Vol. 4, pp. 52–53
"Overview of Equity Securities," Ryan C. Fuhrmann and Asjeet S. Lamba
2012 Modular Level I, Vol. 5, pp. 194–195
Study Session 11-37-h; 14-50-h
Calculate and interpret the cost of equity capital using the capital asset pricing model approach, the dividend discount model approach, and the bond-yield-plus risk-premium approach.
Compare a company's cost of equity, its (accounting) return on equity, and investors' required rates of return.

A is correct. The company's cost of equity is often used as a proxy for the investors' minimum required rate of return because it is the minimum expected rate of return that a company must offer its investors to purchase its shares in the primary market and to maintain its share price in the secondary market. Using the CAPM, the company's cost of equity = 3.50% + 1.80(5.25%) = 12.95%, compared with the fund manager's required rate of return of 13.60%. Therefore, the fund manager should not invest in the stock.

90. An observation that stocks with above average price-to-earnings ratios have consistently underperformed those with below average price-to-earnings ratios *least likely* contradicts which form of the market efficiency?

A. Weak form
B. Strong form
C. Semi-strong form

Answer = B

"Market Efficiency," W. Sean Cleary, Howard J. Atkinson, and Pamela Peterson Drake
2012 Modular Level I, Vol. 5, pp. 140–144
Study Session 13-49-d, f
Contrast the weak-form, semi-strong-form, and strong-form market efficiency.
Describe identified market pricing anomalies, and explain possible inconsistencies with market efficiency.

B is correct. The observation that stocks with high above-average price-to-earnings ratios have consistently underperformed those with below-average price-to-earnings ratios is a cross-sectional anomaly. It is a contradiction to the semi-strong form of market efficiency and weak-form market efficiency because all the information used to categorize stocks by their price-to-earnings ratios is publicly available.

Questions 91 through 96 relate to Derivative Investments

91. When purchasing a futures contract, the initial margin requirement refers to the:

A. minimum account balance required as prices change.
B. performance bond ensuring fulfillment of the obligation.
C. amount needed to finance the purchase of the underlying asset.

Answer = B

"Futures Markets and Contracts," Don M. Chance
2011 Modular Level I, Vol. 6, pp. 55–56
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 the initial margin required is a good faith deposit or performance bond.

92. A buyer would face the *greatest* risk of default with:

A. a farmer making physical delivery on a short soybean futures position.
B. an investment bank making cash settlement on a short euro futures position.
C. a multinational firm making cash settlement on a short U.S. dollar forward contract.

Answer = C

"Futures Markets and Contracts," Don M. Chance
2011 Modular Level I, Vol. 6, p. 53
Study Session 17-62-b
Compare futures contracts and forward contracts.

C is correct because in a forward contract, each party assumes the risk that the other party will default.

93. Which of the following statements *most* closely relates to the concept of moneyness?

A. The sum of money the option buyer pays the seller is called the premium.
B. Both call and put option prices decline as the time to expiration becomes shorter.
C. One would never exercise a call option if the price of the underlying is below the strike price.

Answer = C

"Option Markets and Contracts," Don M. Chance
2011 Modular Level I, Vol. 6, pp. 85–86
Study Session 17-63-c
Define the concept of moneyness of an option.

C is correct because only an in-the-money option would be exercised. Moneyness describes the relationship between the price of the underlying and an option's exercise price.

94. The intrinsic value of an option is always zero:

A. at expiration.
B. when its time value is zero.
C. when it is out-of-the-money.

Answer = C

"Option Markets and Contracts," Don M. Chance
2011 Modular Level I, Vol. 6, pp. 98–100
Study Session 17-63-i
Define intrinsic value and time value, and explain their relationship.

C is correct because an out-of-the-money option will have an intrinsic value of zero at all times.

95. Euribor would *most likely* be the interest rate quoted on a large:

A. euro time deposit in Toronto.
B. dollar time deposit in Frankfurt.
C. euro dollar time deposit in the United States.

Answer = A

"Forward Markets and Contracts," Don M. Chance
2011 Modular Level I, Vol. 6, pp. 40–41
Study Session 17-61-e
Describe the characteristics of the euro dollar time deposit market, and define LIBOR and Euribor.

A is correct because Euribor is the interest rate on large euro currency time deposits traded in most major world cities.

96. The *least likely* way to terminate a swap is to:

A. purchase and exercise a swaption.
B. pay the market value to the counterparty.
C. sell an offsetting swap listed on an exchange.

Answer = C

"Swap Markets and Contracts," Don M. Chance
2011 Modular Level I, Vol. 6, pp. 133–134
Study Session 17-64-a
Describe the characteristics of swap contracts, and explain how swaps are terminated.

C is correct because swaps are not listed on an exchange.

Questions 97 through 108 relate to Fixed Income Investments

97. Which of these embedded options *most likely* benefits the investor?

A. The floor in a floating-rate security
B. An accelerated sinking fund provision
C. The call option in a fixed-rate security

Answer = A

"Features of Debt Securities," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, p. 337
Study Session 15-53-e

Identify common options embedded in a bond issue, explain the importance of embedded options, and identify whether such options benefit the issuer or the bondholder.

A is correct because the floor guarantees a minimum rate the investor will earn.

98. Consider two bonds that are identical except for their coupon rates. The bond that will have the highest interest rate risk *most likely* has the:

A. lowest coupon rate.
B. highest coupon rate.
C. coupon rate closest to its market yield.

Answer = A

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, p. 354
Study Session 15-54-c
Explain how a bond maturity, coupon, embedded options, and yield level affect its interest rate risk.

A is correct because a lower coupon rate means that more of the bond's value comes from repayment of face value, which occurs at the end of the bond's life.

99. Duration is *most* accurate as a measure of interest rate risk for a bond portfolio when the slope of the yield curve:

A. increases.
B. decreases.
C. stays the same.

Answer = C

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 359–363
Study Session 15-54-g
Describe yield-curve risk, and explain why duration does not account for yield-curve risk.

C is correct because duration measures the change in the price of a portfolio of bonds if the yields for all maturities change by the same amount; that is, it assumes the slope of the yield curve stays the same.

100. An investor whose marginal tax rate is 33.5% is analyzing a tax-exempt bond offering a yield of 5.20%. The taxable-equivalent yield of the bond is *closest* to:

A. 3.90%.
B. 6.94%.
C. 7.82%.

Answer = C

"Understanding Yield Spreads," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 464–465
Study Session 15-56-i
Calculate the after-tax yield of a taxable security and the tax-equivalent yield of a tax-exempt security.

C is correct because the Tax-equivalent yield = Tax-exempt yield/(1 – Marginal tax rate) = 5.20%/(1 – 0.335) = 7.82%.

101. If the yield on a 5-year U.S. corporate bond is 7.39% and the yield on a 5-year U.S. Treasury note is 4.26%, the relative yield spread of the bond is *closest* to:

A. 3.13%.
B. 42.40%
C. 73.50%.

Answer = C

"Understanding Yield Spreads," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 456–457
Study Session 15-56-e
Calculate and compare yield spread measures.

C is correct because the Relative yield spread = (Bond yield – Reference yield)/Reference yield = (7.39% – 4.26%)/4.26% = 73.50%.

102. Consider a $100 par value bond, with an 8% coupon paid annually, maturing in 20 years. If the bond currently sells for $96.47, the yield to maturity is *closest* to:

A. 7.41%.
B. 8.29%.
C. 8.37%.

Answer = C

"Yield Measures, Spot Rates, and Forward Rates," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 538–539
Study Session 16-58-b
Calculate and interpret traditional yield measures for fixed-rate bonds, and explain their limitations and assumptions.

C is correct because a security with a present value of 96.47, 19 interest payments of 8, and a 20th payment of principal plus interest (108) has a yield to maturity of 8.37%.

103. Consider two ten-year bonds, one that contains no embedded options and the other that gives its owner the right to convert the bond to a fixed number of shares of the issuer's common stock. The convertibility option in the second bond cannot be exercised for five years. The bonds are otherwise identical. Compared with the yield on the convertible bond, the yield on the option-free bond is *most likely*:

A. lower.
B. higher.
C. the same.

Answer = B

"Understanding Yield Spreads," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 461–462
Study Session 15-56-g
Describe how embedded options affect yield spreads.

B is correct because the convertibility option provides a benefit to the investor, who will accept a lower yield on the convertible bond compared with the option-free bond.

104. Using the U.S. Treasury spot rates provided below, the arbitrage-free value of a 2-year Treasury, $100 par value bond with a 6% coupon rate is *closest* to:

Period	**Years**	**Spot Rate**
1	0.5	1.60%
2	1.0	2.20%
3	1.5	2.70%
4	2.0	3.10%

A. $99.75.
B. $105.65.
C. $107.03.

Answer = B

"Introduction to the Valuation of Debt Securities," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 504–506
Study Session 16-57-f
Explain and demonstrate the use of the arbitrage-free valuation approach, and describe how a dealer can generate an arbitrage profit if a bond is mispriced.

B is correct because the value of the bond is

$$\frac{3}{\left(1+0.0160/2\right)^{1}}+\frac{3}{\left(1+0.0220/2\right)^{2}}+\frac{3}{\left(1+0.0270/2\right)^{3}}+\frac{103}{\left(1+0.0310/2\right)^{4}}=105.65$$

105. Consider three bonds that have the same yield to maturity and maturity. The bond with the greatest reinvestment risk is *most likely* the one selling at:

A. par.
B. a discount.
C. a premium.

Answer = C

"Yield Measures, Spot Rates, and Forward Rates," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 543–544
Study Session 16-58-c
Explain the reinvestment assumption implicit in calculating yield to maturity, and describe the factors that affect reinvestment risk.

C is correct because yield to maturity is based on the assumption a bond is held to maturity, does not default, and has its coupon payments reinvested at the yield to maturity. The bond selling at a premium has the highest coupon rate and is expected to earn the most reinvestment income from reinvesting those coupon payments at the yield to maturity. If the reinvestment rate falls, this bond will suffer the greatest loss.

106. Using the U.S. Treasury forward rates provided below, the value of a 2½-year, $100 par value Treasury bond with a 5% coupon rate is *closest* to:

Period	**Years**	**Forward Rate**
1	0.5	1.20%
2	1.0	1.80%
3	1.5	2.30%
4	2.0	2.70%
5	2.5	3.00%

A. $101.52.
B. $104.87.
C. $106.83.

Answer = C

"Yield Measures, Spot Rates, and Forward Rates," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 572–575
Study Session 16-58-g
Explain a forward rate, and calculate spot rates from forward rates, forward rates from spot rates, and the value of a bond using forward rates.

C is correct because the value of the bond is

$$\frac{2.5}{\left(1+.012/2\right)}+\frac{2.5}{\left(1+.012/2\right)\times\left(1+.018/2\right)}+\frac{2.5}{\left(1+.012/2\right)\times\left(1+.018/2\right)\times\left(1+.023/2\right)}$$
$$+\frac{2.5}{\left(1+.012/2\right)\times\left(1+.018/2\right)\times\left(1+.023/2\right)\times\left(1+.027/2\right)}$$
$$+\frac{102.5}{\left(1+.012/2\right)\times\left(1+.018/2\right)\times\left(1+.023/2\right)\times\left(1+.027/2\right)\times\left(1+.03/2\right)}=106.83$$

107. If three bonds are otherwise identical, the one exhibiting the highest level of positive convexity is *most likely* the one that is:

A. putable.
B. callable.
C. option-free.

Answer = A

"Introduction to the Measurement of Interest Rate Risk," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 612–620
Study Session 16-59-b, c
Describe the price volatility characteristics for option-free, callable, prepayable, and putable bonds when interest rates change.
Describe positive convexity, negative convexity, and their relation to bond price and yield.

A is correct because when interest rates rise, a putable bond is more likely to be put back to the issuer by the investor, limiting the loss of value and giving the bond more positive convexity than an option-free bond. In contrast, a callable bond is likely to be called from the investor when interest rates fall, limiting the gain in value and giving the bond negative convexity.

108. The table below provides information about a portfolio of three bonds.

Bond	**Maturity**	**Price**	**Par Amount**	**Duration**
1	17-year	$109.2461	$16 million	8.56
2	20-year	$100.4732	$4 million	9.19
3	25-year	$84.6427	$8 million	11.48

Based on this information, the duration of the portfolio is *closest* to:

A. 9.35.
B. 9.48.
C. 9.74.

Answer = A

"Introduction to the Measurement of Interest Rate Risk," Frank J. Fabozzi
2012 Modular Level I, Vol. 5, pp. 612–620
Study Session 16-59-g
Calculate the duration of a portfolio, given the duration of the bonds comprising the portfolio, and explain the limitations of portfolio duration.

A is correct because the market values of the bonds (Price × Par amount) are $17,479,376, $4,018,928, and $6,771,416, respectively, for a portfolio value of $28,269,720. Therefore, the duration of the portfolio is

$$\left(\frac{17{,}479{,}376}{28{,}269{,}720}\times 8.56\right)+\left(\frac{4{,}018{,}928}{28{,}269{,}720}\times 9.19\right)+\left(\frac{6{,}771{,}416}{28{,}269{,}720}\times 11.48\right)=9.35$$

Questions 109 through 114 relate to Alternative Investments

109. Which of the following *least likely* describes an advantage of investing in hedge funds through a fund of funds? A fund of funds may provide investors with:

A. lower fees due to economies of scale.
B. access to funds that are closed to new investors.
C. access to managers with expertise in finding reliable and good-quality hedge funds.

Answer = A

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2012 Modular Level I, Vol. 6, pp. 223–224
Study Session 18-66-k
Explain the benefits and drawbacks to fund of funds investing.

A is correct because the fees on funds of funds are usually higher. The fund of funds manager charges a fee, and there is a fee charged by each hedge fund.

110. Compared with investment in an open-ended index mutual fund, which of these is *least likely* a benefit to an investor in an index exchange traded fund (ETF) on the same index?

A. Lower bid–ask spreads
B. Managing the timing of capital gains
C. Ability to sell short and buy on margin

Answer = A

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2012 Modular Level I, Vol. 6, pp. 195–196
Study Session 18-66-d
Explain the advantages and risks of ETFs.

A is correct because open-ended mutual fund shares are created and redeemed at net asset value with no bid–ask spread, whereas ETFs trade like stocks with a bid–ask spread.

111. Which of the following is *least likely* an aggregation vehicle for real estate ownership?

A. Leveraged equity rights
B. Real estate investment trusts (REITs)
C. Real estate limited partnerships (RELPs)

Answer = A

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2012 Modular Level I, Vol. 6, pp. 201–202
Study Session 18-66-e
Describe the forms of real estate investment, and explain their characteristics as an investable asset class.

A is correct because leveraged equity rights is not an aggregation vehicle. Leveraged equity does not give investors collective access to real estate investments.

112. An investor might consider investments in commodities because, historically, commodity returns have had a higher positive correlation with:

A. inflation.
B. bond returns.
C. stock returns.

Answer = A

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2012 Modular Level I, Vol. 6, pp. 235–236
Study Session 18-66-q
Explain the motivation for investing in commodities, commodities derivatives, and commodity-linked securities.

A is correct because commodity returns have had a positive correlation with inflation, as opposed to their low to negative correlation with bond and stock returns.

113. Do base management fees *most likely* get paid to the manager of a hedge fund regardless of the fund's performance?

A. Yes
B. No, only when the fund's gross return is positive
C. No, only when the fund's net asset value exceeds the previous high water mark

Answer = A

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2012 Modular Level I, Vol. 6, pp. 220–221
Study Session 18-66-j
Describe the objectives, legal structure, and fee structures typical of hedge funds, and describe the various classifications of hedge funds.

A is correct because the base management fee is always paid to the fund manager regardless of performance.

114. The three main sources of return for commodities-related investments are:

A. collateral yield, roll yield, and spot price return.
B. collateral yield, convenience yield, and roll yield.
C. convenience yield, dividend yield, and spot price return.

Answer = A

"Investing in Commodities," Ronald G. Layard-Liesching
2012 Modular Level I, Vol. 6, pp. 264–265
Study Session 18-67-b
Describe the sources of return and risk for a commodity investment and the effect on a portfolio of adding an allocation to commodities.

A is correct because the three main sources of return for a commodities investment are collateral yield, roll yield, and spot price return.

Questions 115 through 120 relate to Portfolio Management

115. The execution step of the portfolio management process includes:

A. finalizing the asset allocation.
B. monitoring the portfolio performance.
C. preparing the investment policy statement.

Answer = A

"Portfolio Management: An Overview," Robert M. Conroy and Alistair Byrne
2012 Modular Level I, Vol. 4, pp. 296–300
Study Session 12-43-c
Describe the steps in the portfolio management process.

A is correct. Asset allocation occurs in the execution step.

116. A correlation matrix of the returns for securities A, B, and C is reported below:

Security	**A**	**B**	**C**
A	1.0		
B	0.5	1.0	
C	0.0	–0.5	1.0

Assuming that the expected return and the standard deviation of each security are the same, a portfolio consisting of an equal allocation of which two securities will be *most effective* for portfolio diversification? Securities:

A. A and B.
B. A and C.
C. B and C.

Answer = C

"Portfolio Risk and Return Part I," Vijay Singal
2012 Modular Level I, Vol. 4, pp. 364–365
Study Session 12-44-f
Describe the effect on a portfolio's risk of investing in assets that are less than perfectly correlated.

C is correct. The negative correlation of –0.5 between investment instruments B and C is lowest and therefore is most effective for portfolio diversification.

117. The slope of the security market line (SML) represents the portion of an asset's expected return attributable to:

A. total risk.
B. market risk.
C. diversifiable risk.

Answer = B

"Portfolio Risk and Return Part II," Vijay Singal
2012 Modular Level I, Vol. 4, pp. 422–423
Study Session 12-45-f
Explain the capital asset pricing model (CAPM), including the required assumptions, and the security market line (SML).

B is correct. The slope of the SML is the market risk premium, E(Rm) – Rf. It represents the return of the market less the return of a risk-free asset. Thus, the slope represents the portion of expected return that reflects compensation for market or systematic risk.

118. Last year, a portfolio manager earned a return of 12%. The portfolio's beta was 1.5. For the same period, the market return was 7.5% and the average risk-free rate was 2.7%. Jensen's alpha for this portfolio is *closest to*:

A. 0.75%.
B. 2.10%.
C. 4.50%.

Answer = B

"Portfolio Risk and Return Part II," Vijay Singal
2012 Modular Level I, Vol. 4, pp. 429–432
Study Session 12-45-h
Describe and demonstrate applications of the CAPM and the SML.

B is correct. Jensen's alpha = 0.12 – [0.027 + 1.5(0.075 – 0.027)] = .021 or 2.10%.

119. Information about three stocks is provided below:

Stock	**Expected Return**	**Beta**
Booraem Inc.	12.85%	1.5
Heisen Inc.	11.27%	1.1
Gutmann Inc.	9.51%	0.8

If the expected market return is 9.5% and the average risk-free rate is 1.2%, according to the capital asset pricing model (CAPM) and the security market line (SML), which of the three stocks is *most likely* overvalued?

A. Heisen Inc.
B. Booraem Inc.
C. Gutmann Inc.

Answer = B

"Portfolio Risk and Return Part II," Vijay Singal
2012 Modular Level I, Vol. 4, p. 434
Study Session 12-45-h
Describe and demonstrate applications of the CAPM and the SML.

B is correct. Booraem Inc. is overvalued because it lies below the SML. The expected return, 12.85%, is less than the required return. According to the CAPM, the required return for Booraem Inc. is 0.1365 or 13.65%:
0.1365 = 0.012 + 1.5(0.095 – 0.012).

120. In a strategic asset allocation, assets within a specific asset class are *least likely* to have:

A. low paired correlations.
B. high paired correlations.
C. low correlations with other asset classes.

Answer = A

"Basics of Portfolio Management and Construction," Alistair Byrne and Frank E. Smuddle
2012 Modular Level I, Vol. 4, p. 474
Study Session 12-46-f
Explain the specification of asset classes in relation to asset allocation.

A is correct. In a strategic asset allocation, assets within a specific asset class will have high paired correlations and low correlations with assets in other asset classes.