2009 Level I Mock Exam: Afternoon Session

ANSWERS AND REFERENCES

Questions 1 through 18 relate to Ethical and Professional Standards.

1. According to the *Standards of Practice Handbook*, which of the following statements about fair dealing is *least* accurate? The Standard related to fair dealing:

   A. states that members should treat all clients equally.
   B. imposes a duty with respect to both clients and prospective clients.
   C. pertains to both investment recommendations and investment actions.

   Answer: A

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level I, Volume 1, pp. 53-58
   Study Session 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

   The Standard related to fair dealing states that all clients cannot be treated equally because it is impossible to reach everyone simultaneously and each client has unique needs and objectives.

2. An asset manager, a CFA charterholder, manages small-cap portfolios for institutional clients. The manager is convinced, given the deteriorating economic conditions, that as a group, small-cap equities will underperform during the next 12-24 months. To preserve her client's wealth, the manager sells small-cap equities that she considers most vulnerable to price declines. After considerable research, the manager buys large-cap equities that she believes are better positioned to weather the expected economic downturn. The manager provides complete disclosure of these trades to her clients after the purchase. Has the manager violated any CFA Institute Standards of Professional Conduct?

   A. No.
   B. Yes, relating to suitability.
   C. Yes, relating to misconduct.

   Answer: B

   "Guidance for Standards I-VII," CFA Institute

2009 Modular Level I, Volume 1, pp. 60-62
Study Session 1-2-b
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and the Standards.

According to Standard III(C), members who are responsible for managing a portfolio to a specific mandate, strategy, or style, must only make investment recommendations or take investment actions that are consistent with the stated objectives and constraints of the portfolio.

3. According to the *Standards of Practice Handbook*, a supervisor establishing procedures to eliminate conflicts of interest relating to personal trading would *least likely* recommend requiring:

   A. a ban on employee investments.
   B. disclosures of beneficial ownerships.
   C. duplicate confirmations of employee transactions.

   Answer: A

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level I, Volume 1, p. 97
   Study Session 1-2-c
   Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

   Banning employee investments is *not* recommended. According to Standard VI(B), investment transactions for clients and employers must have priority over investment transactions in which a member or candidate is the beneficial owner. Recommended procedures for compliance with this Standard include establishing reporting procedures for investment personnel. Recommended reporting requirements include disclosure of personal holdings and beneficial ownerships; preclearance procedures; and duplicate confirmations of employee transactions. These reporting requirements are recommended for monitoring and enforcing procedures established to eliminate conflicts of interest relating to personal trading.

4. David Sandridge earned the right to use the CFA designation in September 1968. Sandridge recently retired from the investment management profession. As he is retired, Sandridge no longer attends CFA Institute society meetings and has stopped paying his CFA Institute dues. According to the *Standards of Practice Handbook*, how should Sandridge refer to his affiliation with the CFA Program?

   A. David Sandridge, CFA.

B. David Sandridge, CFA (retired).
C. "I was awarded the CFA charter in 1968."

Answer: C

"Guidance for Standards I-VII," CFA Institute
2009 Modular Level I, Volume 1, pp. 103-108
Study Session 1-2-a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

If a charterholder fails to pay dues for any year, the right to use the CFA designation is suspended. However, stating he was awarded the CFA charter in 1968 is a matter of fact.

5. A CFA Candidate, who is an investment bank equity analyst writes a research report on an oil company recommending a buy. After reviewing the report and not seeing any disclosures a pension fund manager asks the analyst if the investment bank is currently undertaking any corporate finance activity with this oil company. The analyst states that the investment bank is presently not working with the oil company but has done so in the past. The analyst does not mention or include in the research report, that she is related to the majority shareholder of the investment bank and that she owns shares in the oil company. According to the *Standards of Practice Handbook*, the analyst is *least likely* to have violated the CFA Institute Standards of Professional Conduct that relates to:

   A. Disclosure of Conflicts.
   B. Independence and Objectivity.
   C. Additional Compensation Arrangements.

   Answer: C

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level I, Volume 1, pp. 21-25, 75, 89-91
   Study Session 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

   It is not evident that the CFA Candidate did not disclose to her employer any additional compensation arrangements as a result of being related to the majority shareholder or a shareholder in the oil company. However, it is evident that the CFA

Candidate most likely violated Standard VI(A)-Conflicts of Interests, Disclosure of Conflicts which requires members and candidates to fully disclose to clients, potential clients, and employers all actual and potential conflicts of interest, as the Candidate did not disclose her relationship with regards to being a relative and a shareholder of the oil company. In addition, the Candidate most likely violated Standard I(B)-Professionalism-Independence and Objectivity in that every member or candidate should endeavor to avoid situations that could cause or be perceived to cause a loss of independence or objectivity in recommending investments or taking investment action. By not disclosing the fact that the Candidate is a shareholder and related to the Managing Director of the oil company she could be perceived to be in a position of a conflict of interest and one where she has a loss of independence and objectivity.

6. According to the *Standards of Practice Handbook*, members are *least likely* required to disclose to clients their:

   A. service as directors.
   B. firm's market-making activities.
   C. responsibilities as CFA charterholders.

   Answer: C

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level I, Volume 1, p. 90
   Study Session 1-2-b
   Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and the Standards.

   Members are not required to disclose their responsibilities as CFA charterholders to clients. They are, however, required to disclose all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to their clients, prospective clients, and employer. Service as a director, market-making activities, and beneficial ownership of stock are three examples of such matters.

7. According to the *Standards of Practice Handbook*, a member with supervisory responsibilities violates the CFA Institute Standards of Professional Conduct if the member fails to:

   A. prevent violations of the law.
   B. prevent violations of the CFA Code and Standards.
   C. establish and implement written compliance procedures.

Answer: C

"Guidance for Standards I-VII," CFA Institute
2009 Modular Level I, Volume 1, pp. 76-78
Study Session 1-2-b
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and the Standards.

Members with supervisory responsibility must make reasonable efforts to detect violations of laws, rules, regulations, and the Code and Standards. They exercise reasonable supervision by establishing and implementing written compliance procedures.

8. For the past decade, Rachel Pederson, CFA, has managed the account of Olga Stefansson and in that time developed a close relationship with her client. Stefansson has a beach house in the Bahamas which she offers to Pederson and her family free use of for two weeks as a reward for the excellent returns generated in her account. Pederson is so busy at work she does not tell anyone where she is going for vacation. When accepting Stefansson's offer, Pederson *least likely* violates the CFA Institute Standard relating to:

   A. Loyalty to Employer.
   B. Disclosure of Conflicts.
   C. Independence and Objectivity.

   Answer: A

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level I, Volume 1, pp. 21-22, 69, 75, 89
   Study Session 1–2–a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

   The Standards require that members not accept gifts or compensation that might reasonably compete with their employer's interest unless they obtain written consent from all parties involved. Arrangements such as that offered to Pederson may cause a conflict of interest or result in partiality that could impede Pederson's independence and objectivity.

9. A CFA charterholder owns an asset management firm with offices downtown. To minimize rent expenses, each year the charterholder ships the previous year's research records to a nearby warehouse. There, the reports are digitized and stored in both electronic and hard-copy forms. After five years, all paper copies are destroyed and only electronic copies are retained. Are the charterholder's record-retention procedures in compliance with the CFA Institute Standards of Practice?

   A. No.
   B. Yes, because he is only required to retain hard copies for five years.
   C. Yes, because he still retains electronic copies of the original documents.

   Answer: C

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level I, Volume 1, p. 88
   Study Sessions 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

   According to Standard V (C) Investment Analysis, Recommendations, and Actions: Record Retention, members must maintain appropriate records in either electronic or hard copy form for a minimum of seven years. The Standards do not require on-site storage.

10. After work each day, Shinichi Takada, CFA, runs a popular internet blog where he comments on micro-cap stocks. The blog includes a bio of Takada with his education and employment history. He receives no compensation for the blog. On the blog, Takada recommends purchases and sales of stocks based upon astrology. When blogging, Takada *least likely* violates CFA Institute Standard relating to:

    A. Fair Dealing.
    B. Duty to Employer.
    C. Diligence and Reasonable Basis.

    Answer: A

    "Guidance for Standards I-VII," CFA Institute
    2009 Modular Level I, Volume 1, pp. 53-55, 69-70, 80-81
    Study Session 1–2–a
    Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

Takada's use of astrology as a research methodology violates the Standards relating to Loyalty, Prudence, and Care as well as Diligence and Reasonable Basis. His research methodology and blog may also reflect poorly on his employer and cause the employer harm. Takada is least likely to violate the Standard relating to Fair Dealing because the blog is a method of mass communication that makes Takada's investment recommendations available to all readers simultaneously.

11. A CFA charterholder agreed in writing with his former employer not to solicit former clients for a period of one year after his termination. After he left his former employer, he consulted with a lawyer about whether the agreement was legally enforceable. The lawyer advised the charterholder that it was doubtful that the agreement could be enforced, so the charterholder sent a marketing brochure about his new firm to his former clients. According to the *Standards of Practice Handbook*, which of the following statements is *most* accurate with respect to the charterholder's conduct?

    A. The Standards do not apply to the charterholder's conduct.
    B. The Standards require the charterholder to comply with the agreement with his former employer.
    C. Because the charterholder relied upon the opinion of legal counsel, he did not violate the Standards.

    Answer: B

    "Guidance for Standards I-VII," CFA Institute
    2009 Modular Level I, Volume 1, pp. 69-71
    Study Session 1–2–a
    Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

    A member's duty of loyalty to his employer prohibits him from violating any applicable non-compete agreement. By not complying with a non-compete agreement he also puts his integrity in question.

12. A CFA charterholder is asked to review her firm's soft dollar practices. As part of the review, she notes that her firm has failed to disclose the practices to the firm's clients in writing as required by law. The charterholder quickly prepares and distributes the appropriate disclosures. She does not report the firm's violation to the appropriate regulatory authority. According to the *Standards of Practice Handbook*, by not reporting the violation to the regulatory authority, has the charterholder violated any CFA Institute Standards of Professional Conduct?

A. No.
B. Yes, because she failed to act in the best interest of her employer.
C. Yes, because she is required to report legal violations to the appropriate authority.

Answer: A

"Guidance for Standards I-VII," CFA Institute
2009 Modular Level I, Volume 1, pp. 15-18, 48-50
Study Session 1-2-a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

Although disclosure may be prudent in certain circumstances and required if mandated by applicable law, the Code and Standards do not require that members report legal violations to the appropriate governmental or regulatory organizations.

13. Romar Brockman, CFA, is a sell-side analyst. Approximately half of Brockman's compensation comes from his firm's investment-banking division. Brockman is asked to write a report about Anacortes Concrete (AC), an investment-banking client. Despite his concerns about a slowdown in concrete demand, Brockman issues a very positive report on AC. When issuing his report, Brockman *least likely* violates the CFA Institute Standard relating to:

A. Loyalty to Employer.
B. Disclosure of Conflicts.
C. Loyalty, Prudence, and Care.

Answer: A

"Guidance for Standards I-VII," CFA Institute
2009 Modular Level I, Volume 1, pp. 48-50, 89-91
Study Session 1–2–a

Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

The Standards require members to put client interests ahead of member and employer interests. Because Brockman's compensation is dependent upon investment banking revenues, Brockman may not be objective. When issuing the report, he is in jeopardy of violating Standards relating to Independence and Objectivity; Loyalty, Prudence, and Care; and Disclosure of Conflicts.

14. Eric Pantoja is enrolled as a candidate in the CFA examination program. He works as an assistant for Chehalis Investments (CI). Pantoja sees CI's purchase list and purchases several of the recommended stocks. Pantoja *least likely* violates the CFA Institute Standard relating to:

A. Loyalty to Employer.
B. Priority of Transactions.
C. Diligence and Reasonable Care.

Answer: C

"Guidance for Standards I-VII," CFA Institute
2009 Modular Level I, Volume 1, pp. 35, 69, 80, 94-95
Study Session 1–2–a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

Pantoja least likely violates the Standard relating to Diligence and Reasonable Care because he is taking investment actions on his own behalf rather than on behalf of clients. His actions violate the Standards relating to Priority of Transactions (he trades ahead of his employer and its clients), Loyalty to Employer (his actions cause harm to his employer), and Misconduct (his actions reflect adversely on his professional integrity).

15. Fred Brubacher, CFA, is an analyst at Van City Bank (VCB). Brubacher receives compensation for referrals to the bank's brokerage and personal financial-planning divisions. His recent referrals are long-time clients from his previous employer, and Brubacher does not mention VCB's referral arrangement. Does Brubacher violate any CFA Institute Standards?

    A. No.
    B. Yes, with respect to misrepresentation.
    C. Yes, with respect to conflicts of interest.

    Answer: C

    "Guidance for Standards I-VII," CFA Institute
    2009 Modular Level I, Volume 1, pp. 99
    Study Session 1–2–a
    Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

    Compensation or other benefits received for the recommendation of products or services represents a conflict of interest. According to the Standards, Brubacher must disclose the referral fee arrangement.

16. A CFA charterholder has decided to revise her firm's written compliance manual. She checks with counsel regarding changes to applicable laws, rules, and regulations. She incorporates these changes as well as changes to the Code and Standards in the new version and distributes copies to her staff along with a memorandum. The memorandum states that the updated manual includes compliance procedures designed to meet industry standards, regulatory requirements, requirements of the Code and Standards, and circumstances of the firm. According to the *Standards of Practice Handbook,* did the charterholder violate any Standard of Professional Conduct?

    A. No.
    B. Yes, because compliance procedures may not be designed to meet industry standards.
    C. Yes, because compliance procedures should not be altered to meet the circumstances of the firm.

    Answer: A

    "Guidance for Standards I-VII", CFA Institute
    2009 Modular Level I, Volume 1, pp. 76-78

Study Sessions 1-2-a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

The charterholder committed no violation. According to Standard IV (C) Duties to Employers: Responsibilities of Supervisors, "adequate" procedures are those designed to meet industry standards, regulatory requirements, the requirements of the Code and Standards, and the circumstances of the firm. The Standard requires that members with supervisory authority make reasonable efforts to prevent violations of applicable laws, rules, regulations, and the Code and Standards.

17. A CFA charterholder runs a small investment management firm. The firm subscribes to a service from a large investment research firm that provides research reports that can be repackaged as in-house research by smaller firms. The firm distributes these reports to clients with specific references as to their source and author. According to the *Standards of Practice Handbook*, has the charterholder violated the Standard related to misrepresentation?

A. No.
B. Yes, because she distributed plagiarized material.
C. Yes, because she misrepresented her firm's services.

Answer: A

"Guidance for Standards I-VII", CFA Institute
2009 Modular Level I, Volume 1, pp. 29-31
Study Session 1–2–a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

Members may repackage and distribute third-party research reports as long as they do not represent themselves as the author of the report.

18. Firms claiming compliance with the GIPS Standards are *least likely* to be required to:

A. undertake a verification process.
B. provide a composite list and description to any prospective client on request.
C. document their policies and procedures used in establishing and maintaining compliance.

Answer: A

“Global Investment Performance Standards” (CFA Institute, 2005)
2009 Modular Level I, Volume 1, pp. 131-134
Study Session 1-3-c, 1- 4 - a
Explain the requirements for verification of compliance with GIPS standards.
Describe the key characteristics of the GIPS standards and the fundamentals of compliance.

Firms claiming compliance with the GIPS Standards are encouraged, but not required to undertake the verification process, which is defined as the review of a firm’s performance measurement processes and procedures by an independent third-party verifier.

Questions 19 through 32 relate to Quantitative Methods

19. A money manager has $1,000,000 to invest for one year. She has identified three alternative one-year certificates of deposit (CD) shown below:

	Compounding frequency	**Annual interest rate**
CD1	Monthly	7.82%
CD2	Quarterly	8.00%
CD3	Continuously	7.95%

Which CD has the *highest* effective annual rate (EAR)?

A. CD 1
B. CD 2
C. CD 3

Answer: C

“The Time Value of Money,” Richard A. Defusco, Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle
2008 Modular Level I, Volume 1, pp. 179-183
Study Session 2-5-c
Calculate and interpret the effective annual rate, given the stated annual interest rate and the frequency of compounding, and solve time value of money problems when compounding periods are other than annual.

Use the EAR (effective annual rate) to compare the investments:

Investment	Formula	EAR

CD1	$(1 + .0782/12)^{12} - 1$	8.1065%
CD2	$(1 + .080/4)^{4} - 1$	8.2432%
CD3	$\boldsymbol{e^{0.0795 \times 1} - 1}$	**8.2746%**
CD 3 has the largest EAR		

20. A consumer is shopping for a home. His budget will support a monthly payment of $1,300 on a 30-year mortgage with an annual interest rate of 7.2 percent. If the consumer puts a 10 percent down payment on the home, the most he can pay for his new home is *closest* to:

A. $191,518.
B. $210,840.
C. $212,800.

Answer: C

"The Time Value of Money," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 190-208
Study Session 2-5-d, e
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.
Draw a time line, and solve time value of money applications (for example, mortgages and savings for college tuition or retirement).

The consumer's budget will support a monthly payment of $1,300. Given a 30-year mortgage at 7.2 percent, the loan amount will be $191,517.76 (N = 360, %I = 0.6, PMT = 1,300, solve for PV). If he makes a 10% down payment, then the most he can pay for his new home = $191,517.76 / (1 – 0.10) = $212,797.51 ≈ $212,800.

21. An analyst gathers the following information about a common stock investment:

	Date	Amount €
Stock purchase (1 share)	15 January 2006	86.00
Stock purchase (1 share)	15 January 2007	94.00
Stock sale (2 shares @106 per share)	15 January 2008	212.00

The stock does not pay a dividend. The money-weighted rate of return on the investment is *closest* to:

A. 11.02%.
B. 11.60%.
C. 11.89%.

Answer: B

"Discounted Cash Flow Applications," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runk1e, CFA
2008 Modular Level I, Volume 1, pp. 222-225
Study Session 2-6-c
Calculate, interpret, and distinguish between the money-weighted and time-weighted rates of return of a portfolio and appraise the performance of portfolios based on these measures.

The money-weighted rate of return is the IRR based on the cash flows related to the investment. In this case, a cash outflow of €86 occurs at t=0, another outflow of €94 occurs at t=1, and an inflow of €212 occurs at t=2. Using a financial calculator, the IRR of these cash flows is 11.60%.

22. An analyst gathers the price-earnings ratios (P/E) for the firms in the S&P 500 and then ranks the firms from highest to lowest P/E. She then assigns the number 1 to the group with the lowest P/E ratios, the number 2 to the group with the second lowest P/E ratios, and so on. The measurement scale used by the analyst is *best* described as:

A. ordinal.
B. interval.
C. nominal.

Answer: A

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 242-243

Study Session 2-7-a
Differentiate between descriptive statistics and inferential statistics, between a population and a sample, and among the types of measurement scales.

The analyst is using an ordinal scale which involves sorting data into categories based on some characteristic, such as the firms' P/E ratios.

23. Using Chebyshev's inequality, what is the minimum proportion of observations from a population of 500 that must lie within two standard deviations of the mean, regardless of the shape of the distribution?

A. 75%
B. 89%
C. 99%

Answer: A

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 289-291
Study Session 2-7-g
Calculate and interpret the proportion of observations falling within a specified number of standard deviations of the mean, using Chebyshev's inequality.

Chebyshev's inequality holds for any distribution, regardless of shape, and states that the minimum proportion of observations located within k standard deviations of the mean is equal to $1 – 1/k^2$. In this case, k = 2 and 1 – 1/4 = 0.75 or 75%.

24. If a distribution exhibits positive skewness, then the mean *most likely* is located to the:

A. left of both the median and mode.
B. right of both the median and mode.
C. left of the median and right of the mode.

Answer: B

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 297-302
Study Session 2-7-i

Define and interpret skewness, explain the meaning of a positively or negatively skewed return distribution, and describe the relative locations of the mean, median, and mode for a nonsymmetrical distribution.

A positively skewed distribution has a long tail to the right with a large frequency of observations occurring in the left part of the distribution. For a distribution of returns, this means frequent small losses and a few extreme gains. The result is that the extreme gains pull the mean to the right while the mode resides on the left with the bulk of the observations. The median falls between the mean and the mode.

25. The manager of a pension fund determines that during the past five years 85 percent of the stocks in the portfolio have paid a dividend and 40 percent of the stocks have announced a stock split. If 95 percent of the stocks have paid a dividend and/or announced a stock split, the joint probability of a stock paying a dividend and announcing a stock split is *closest* to:

A. 30%.
B. 45%.
C. 55%.

Answer: A

"Probability Concepts," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 327-328
Study Session 2-8-e
Calculate and interpret 1) the joint probability of two events, 2) the probability that at least one of two events will occur, given the probability of each and the joint probability of the two events, and 3) a joint probability of any number of independent events.

The probability that at least one of two events will occur is the sum of the probabilities of the separate events less the joint probability of the two events.

$P(A \text{ or } B) = P(A) + P(B) - P(AB)$

$95\% = 85\% + 40\% - P(AB)$; therefore $P(AB) = 30\%$

26. Which of the following statements about a normal distribution is *least* accurate? A normal distribution:

A. has an excess kurtosis of 3.
B. is completely described by two parameters.
C. can be the linear combination of two or more normal random variables.

Answer: A

"Common Probability Distributions," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 391-392
Study Session 3-9-f
Explain the key properties of the normal distribution, distinguish between a univariate and a multivariate distribution, and explain the role of correlation in the multivariate normal distribution.

A normal distribution has a kurtosis of 3. Its excess kurtosis (kurtosis – 3.0) equals zero.

27. A portfolio manager gathers the following information about three possible asset allocations:

Allocation	Expected annual return	Standard deviation of return
I	13%	6%
II	26%	14%
III	32%	20%

The manager's client has stated that her minimum acceptable return is 8 percent. Based on Roy's safety-first criterion, the *most* appropriate allocation is:

A. I.
B. II.
C. III.

Answer: B

"Common Probability Distributions," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 397-399
Study Session 3-9-i
Define shortfall risk, calculate the safety-first ratio, and select an optimal portfolio using Roy's safety-first criterion.

Roy's safety-first ratio = $[E(R_P) - R_L] / \sigma_P$ with the optimal portfolio having the highest ratio. The safety-first ratios for the three allocations are:

Allocation	Safety-first ratio
I	0.83
II	1.29
III	1.20

28. An analyst gathers the following information about a sample:

Mean	12
Number of observations	50
Variance	32

The standard error of the sample mean is *closest* to:

A. 0.47.
B. 0.64.
C. 0.80.

Answer: C

"Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 428-429
Study Session 3-10-e
Calculate and interpret the standard error of the sample mean.

The standard error of the sample mean is the sample standard deviation (or the population standard deviation if known) divided by the square root of the sample size. In this case, the standard error of the sample mean = $32^{0.5} / 50^{0.5} = 0.80$.

29. Compared to the normal distribution, the Student's *t*-distribution *most likely*:

A. has fatter tails.
B. is more peaked.
C. has greater degrees of freedom.

Answer: A

"Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2009 Modular Level I, Volume 1, pp. 436-438

Study Session 3-10-i
Describe the properties of Student's *t*-distribution, and calculate and interpret its degrees of freedom.

The Student's *t*-distribution has fatter tails and is less peeked compared to the normal distribution.

30. Which of the following steps in hypothesis testing *most likely* follows collecting the data and calculating the test statistic?

A. Stating the decision rule.
B. Making the statistical decision.
C. Specifying the significance level.

Answer: B

"Hypothesis Testing," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA,
2009 Modular Level I, Volume 1, pp. 456-466
Study Session 3-11-a
Define a hypothesis, describe the steps of hypothesis testing, interpret and discuss the choice of the null hypothesis and alternative hypothesis, and distinguish between one-tailed and two-tailed tests of hypotheses.

The seven steps in hypothesis testing are:
1) Stating the hypothesis.
2) Identifying the appropriate test statistic and its probability distribution.
3) Specifying the significance level.
4) Stating the decision rule.
5) Collecting the data and calculating the test statistic.
6) Making the statistical decision.
7) Making the economic or investment decision.

31. The following end of month payments of $400, $700, and $300, (respectively) are due. Given a stated annual interest rate of 3.60 percent, the minimum amount of money needed in an account today to satisfy these future payments is *closest* to:

A. $1,308.
B. $1,387.
C. $1,391.

Answer: C

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2008 Modular Level I, Volume 1, pp. 188-191
Study Session 2-5-c, d
Calculate and interpret the effective annual rate, given the stated annual interest rate and the frequency of compounding, and solve time value of money problems when compounding periods are other than annual.
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.

The monthly interest rate is 3.6/12 = 0.3. The present value is $1,391.48 = $400.00/(1 + 0.3%) + $700.00/(1 + 0.3%)^2 + $300.00/(1 + 0.3%)^3. Using a financial calculator CF_1 = 400, CF_2 = 700, CF_3 = 300, I= 0.3 Compute PV, PV = 1,391.48.

32. Which of the following investments will grow to the largest future value?

Investment	Stated Annual Interest Rate:	Frequency:
I	8.40%	Monthly
II	8.60%	Quarterly
III	8.64%	Semi-annually

A. I.
B. II.
C. III.

Answer: B

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2008 Modular Level I, Volume 1, pp. 179-182
Study Session 2-5-c

Calculate and interpret the effective annual rate, given the stated annual interest rate and the frequency of compounding, and solve time value of money problems when compounding periods are other than annual.

Use the EAR (effective annual rate) to compare the investments:

Investment	Formula	EAR
I	$(1 + .084/12)^{12} - 1$	8.73%
II	$\mathbf{(1 + .086/4)^4 - 1}$	**8.88%**
III	$(1 + .0864/2)^2 - 1$	8.83%
Investment II has the largest EAR		

Questions 33 through 44 relate to Economics

33. If mangoes cost India Rupees (INR) 10 each, a consumer spends his budget on fruits that he values more highly than mangoes. However, at a price of INR 4 per mango the consumer buys 20 mangoes. The total consumer surplus (in INR) is *closest* to:

A. 26.
B. 60.
C. 120.

Answer: B

"Efficiency and Equity", Michael Parkin
2009 Modular Level I, Volume 2, pp. 40-41
Study Session 4-14-b
Distinguish between the price and the value of a product and explain the demand curve and consumer surplus.

The consumer surplus is the value of the good minus the price paid for it (10-4) = 6, summed over the quantity bought. The total consumer surplus is the consumer surplus on each mango that the consumer buys and added together. It is the area of the right triangle = (base x height) / 2 as in Fig.2 on p. 40, with base equal to 20 mangoes a week and the height equal to 6, the consumer surplus on each mango. Thus the total consumer surplus = (20 x 6) / 2 = INR 60 (see example on p.40).

34. The *best* characterization of a firm that is operating on its long-run average cost curve is when it:

A. experiences constant returns to scale.
B. produces a given output at the least possible cost.
C. chooses a plant size that minimizes the average fixed cost.

Answer: B

"Output and Costs", Michael Parkin
2009 Modular Level I, Volume 2, pp. 142-143
Study Session 4-17-d
Explain the firm's production function, its properties of diminishing returns and diminishing marginal product of capital, the relation between short-run and long-run costs, and how economies and diseconomies of scale affect long-run costs.

The long-run average cost curve tells the firm the plant size and the quantity of labor to use at each output to minimize cost. Once the plant size is chosen, the firm operates on the short-run cost curves that apply to that plant size. Therefore, the firm is said to be operating on its long-run average cost curve when it is producing a given output at the least possible cost.

35. As the quantity of labor increases, which of the following is the *most likely* outcome with respect to the marginal revenue product (MRP) of labor?

A. MRP increases for a monopoly.
B. MRP decreases for a firm in perfect competition.
C. MRP increases for both monopoly and a firm in perfect competition.

Answer: B

"Markets for Factors of Production", Michael Parkin
2009 Modular Level I, Volume 2, pp. 255-257
Study Session 5-21-a
Explain why demand for the factors of production is called derived demand, differentiate between marginal revenue and marginal revenue product (MRP), and describe how the MRP determines the demand for labor and the wage rate.

MRP decreases for a firm in perfect competition, due to a decline in marginal product.

36. The cross elasticity of demand for a complementary product would *most likely* be:

A. zero.
B. positive.
C. negative.

Answer: C

“Elasticity”, Michael Parkin
2009 Modular Level I, Volume 2, pp. 19-20, 27
Study Session 4-13-a
Calculate and interpret the elasticities of demand (price elasticity, cross elasticity, income elasticity) and the elasticity of supply, and discuss the factors that influence each measure.

The cross elasticity of demand is negative for a complement and positive for a substitute.

37. The return to entrepreneurial ability in a firm that makes a positive economic profit is *most likely*:

A. normal.
B. less than normal.
C. greater than normal.

Answer: C

“Organizing Production”, Michael Parkin
2009 Modular Level I, Volume 2, p. 98
Study Session 4-16-a
Explain the types of opportunity cost and their relation to economic profit, and calculate economic profit.

The return to entrepreneurial ability is greater than normal in a firm that makes a positive economic profit.

38. The belief that money wage rates are sticky is *least likely* to be associated with:

A. classical macroeconomics.
B. monetarist macroeconomics.
C. Keynesian macroeconomics.

Answer: A

“Aggregate Supply and Aggregate Demand,” Michael Parkin
2009 Modular Level I, Volume 2, pp. 334-337
Study Session 5-23-d
Compare and contrast the classical, Keynesian, and monetarist schools of macroeconomics.

Both Keynesians and monetarists believe that money wage rates are sticky. Classical macroeconomics does not.

39. For a firm in perfect competition, as output increases the marginal revenue will *most likely*:

A. increase.
B. decrease.
C. remain constant.

Answer: C

"Perfect Competition", Michael Parkin
2009 Modular Level I, Volume 2, p. 157-158, Figure 3
Study Session 5-18-b
Determine the profit maximizing (loss minimizing) output for a perfectly competitive firm, and explain marginal cost, marginal revenue, and economic profit and loss.

When output increases for a firm in perfect competition, marginal revenue remains constant while marginal cost changes.

40. Price discrimination is *most likely* an attempt by a monopoly to:

A. resell a product.
B. capture a producer surplus.
C. capture a consumer surplus.

Answer: C

"Monopoly", Michael Parkin
2009 Modular Level I, Volume 2, pp. 193-195
Study Session 5-19-c, d
Explain price discrimination, and why perfect price discrimination is efficient.
Explain how consumer and producer surplus are redistributed in a monopoly, including the occurrence of deadweight loss and rent seeking.

A monopoly employs price discrimination to capture consumer surplus and to convert a consumer surplus to an economic profit.

41. Which of the following will *most likely* lead to cost-push inflation?

A. A decrease in the cost of financing.
B. An increase in the money prices of raw materials.
C. A technology change that lowers production costs.

Answer: B

"U.S. Inflation, Unemployment, and Business Cycles" Michael Parkin
2009 Modular Level I, Volume 2, pp, 388-390
Study Session 6-25-b
Describe and distinguish among the factors resulting in demand-pull and cost-push inflation, and describe the evolution of demand-pull and cost-push inflationary processes.

Increased material costs cause firms to manufacture less. Less manufacturing decreases short-run supply making prices rise (see page 388).

42. Which of the following is *least likely* to be a tool available to central banks for implementing monetary policy?

A. Inflation targeting.
B. Adjusting taxation.
C. Managing interest rates.

Answer: B

"An Overview of Central Banks" Anne Dolganos Picker
2009 Modular Level I, Volume 2, pp. 477-485
Study Session 6-28-b
Discuss monetary policy and the tools utilized by central banks to carry out monetary policy.

Adjusting taxation is not a tool available to central banks. Only the government can adjust taxation as it is a fiscal policy tool.

43. The monetary policy tools available to the Federal Reserve are *least likely* to include:

A. open market operations.
B. the ability to determine the required reserve ratios of its member banks.
C. adjustments to the amount of gold held as reserves against Federal Reserve notes.

Answer: C

"Money, the Price Level, and Inflation," Michael Parkin
2009 Modular Level I, Volume 2, pp. 357-358
Study Session 6-24-d
Explain the goals of the U.S. Federal Reserve (Fed) in conducting monetary policy and how the Fed uses its policy tools to control the quantity of money, and describe the assets and liabilities on the Fed's balance sheet.

The Fed uses three main policy tools to achieve its objectives: required reserve ratios, discount rate, and open market operations. Making adjustments to gold reserves is not one of the fed policy tools.

44. Suppose the CPI basket contains only two goods and services: oranges and haircuts. In the base period, consumers bought 15 oranges at $2 each and 5 haircuts at $10 each. In the current period, consumers buy 15 oranges at $1.75 each and 5 haircuts at $12 each. The CPI for the current period is *closest* to:

A. 107.81.
B. 114.58.
C. 117.97.

Answer: A

"Monitoring Jobs and the Price Level," Michael Parkin
2009 Modular Level I, Volume 2, pp. 305-307, Table 1
Study Session 5-22-d
Explain and calculate the consumer price index (CPI) and the inflation rate, describe the relation between the CPI and the inflation rate, and explain the main sources of CPI bias.

CPI equals 100 times the cost of the CPI basket at current-period prices divided by the cost of the CPI basket at base-period prices. In this problem the current period cost is $(15 \times 1.75 + 5 \times 12) = 86.25$. The base period cost is $(15 \times 2 + 5 \times 10) = 80$. The CPI is $(86.25 / 80) \times 100 = 107.81$.

Questions 45 through 68 relate to Financial Statement Analysis

45. An analyst gathers the following information about a company:

Cost of goods sold	$18.4 million
Average inventory	$2.5 million
Receivables turnover	24 times
Number of days of payables	25 days

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

A. 40.
B. 59.
C. 65.

Answer: A
"Financial Analysis Techniques", Thomas R. Robinson, CFA, Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp. 506-509
"Working Capital Management," Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and Pamela P. Peterson, CFA
2009 Modular Level I, Volume 4, pp. 87-90,
Study Session 10-39-c, 11-46-a, b
Calculate, classify and interpret activity, liquidity, solvency, profitability, and valuation ratios.

Evaluate overall working capital effectiveness of a company, using the operating and cash conversion cycles, and compare its effectiveness with other peer companies.
Calculate and interpret liquidity measures using selected financial ratios for a company and compare it with peer companies.

Cash conversion cycle = DOH+ DSO – payables payment period			
Inventory turnover	$18.4/$2.5	7.36	
DOH: Days of inventory on hand	365/inventory turnover	365/7.36	49.6 days
DSO: Days Sales Outstanding		365/24	15.2 days
Number of days of payables			(25 days)
	Cash conversion cycle		39.8 days

46. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

Two companies operating in the same industry both achieved the same return on equity with the same net sales, but the two companies were different with respect to return on total assets. Compared with the company that had the higher return on total assets, the company with the lower return on total assets *most likely* had a higher:

A. total asset turnover.
B. financial leverage multiplier.
C. proportion of common equity in its capital structure.

Answer: B

"Financial Analysis Techniques", Thomas R. Robinson, CFA, Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn CFA
2009 Modular Level I, Volume 3, pp. 520-525
"Financial Statement Analysis," Pamela P. Peterson, CFA
2009 Modular Level I Volume 4, pp. 132-136
Study Session 10-39-e, 11-47-a
Demonstrate the application of and interpret changes in the component parts of the DuPont analysis (the decomposition of return on equity).
Calculate, interpret, and discuss the DuPont expression and extended DuPont expression for a company's return on equity and demonstrate its use in corporate analysis.

The DuPont system can be used to break down return on equity (ROE) into three components: Profit margin, total asset turnover, and financial leverage multiplier. The first two components can be multiplied to calculate the return on total assets (ROA). If the two companies have the same ROE, the company with the lower ROA must have a higher financial leverage multiplier (lower proportion of common equity in the capital structure).

47. If an analyst is preparing common-size financial statements the *most* appropriate way of expressing the interest expense is as a percentage of:

A. sales.
B. total liabilities.
C. total interest-bearing debt.

Answer: A

"Financial Analysis Techniques", Thomas R. Robinson, CFA, Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn CFA
2009 Modular Level I, Volume 3, pp. 490-492
Study Session 10-39-a
Evaluate and compare companies using ratio analysis, common-size financial statements, and charts in financial analysis.

Interest expense is an income statement account and the common-size percentage should be computed as a percentage of sales for that company.

48. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

An analyst gathers the following information about three equipment sales that a company made at the end of the year:

	Original Cost	Accumulated Depreciation at Date of Sale	Sales Proceeds
1	$200,000	$150,000	$70,000
2	$200,000	$200,000	$30,000
3	$300,000	$250,000	$40,000

All else equal for that year, the company's cash flow from operations will *most likely* be:

A. the same as net income.
B. $40,000 less than net income
C. $140,000 less than net income.

Answer: B

"Understanding the Cash Flow Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp.263 - 265, 267-270
"Long-Lived Assets," R. Elaine Henry, CFA, and Elizabeth Gordon
2009 Modular Level I, Volume 3, pp.361-366
Study Session 8-34-f, 9-36-h
Demonstrate the steps in the preparation of direct and indirect cash flow statements, including how cash flows can be computed using income statement and balance sheet data.
Discuss the impact of sales or exchanges of long-lived assets on financial statements.

Equipment sale 1 results in a gain of $20,000, sale 2 results in a gain of $30,000, and sale 3 results in a loss of $10,000. The net gain is $40,000. The amount that would be deducted from net income to determine cash flow from operations is equal to the net gain of $40,000.

49. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

The following information is from a company's 2008 financial statements ($ millions):

Balances as of the year ended 31 December	**2008**	**2007**
Retained earnings	140	120
Accounts receivable	43	38
Inventory	48	45
Accounts payable	29	36

In 2008 the company declared and paid cash dividends of $5 million and recorded depreciation expense in the amount of $25 million. The company's 2008 cash flow from operations ($ millions) is *closest* to:

A. 25.
B. 30.
C. 35.

Answer: C

"Financial Reporting Mechanics," Thomas R. Robinson, CFA, Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, p.40
"Understanding The Cash Flow Statement", Thomas R. Robinson, CFA, Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp.267-271
Study Session 7-30-f, 8-34-f
Prepare financial statements, given account balances or other elements in the relevant accounting equation, and explain the relationships among the income statement, balance sheet, statement of cash flows, and statement of owners' equity.
Demonstrate the steps in the preparation of direct and indirect cash flow statements, including how cash flows can be computed using income statement and balance sheet data.

The change in retained earnings is $20 and dividends are paid from retained earnings. 2008 net income equals the change in retained earnings plus any dividends paid

during 2008. Depreciation expense is added to net income and the changes in balance sheet accounts are also considered to determine cash flow from operations.
$20 + 5 (dividends) + 25 (depreciation) – 5 (increase in receivables) – 3 (increase in inventory) – 7 (decrease in payables) = $35 million.

50. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

A company using the LIFO inventory method reports a LIFO reserve at year-end of $85,000, which is $20,000 lower than the prior year. If the company had used FIFO instead of LIFO in that year, the company's financial statements would have reported:

A. a lower cost of goods sold, but a higher inventory balance.
B. a higher cost of goods sold, but a lower inventory balance.
C. both a higher cost of goods sold and a higher inventory balance.

Answer: C

"Inventories," Elbie Antonites, CFA, and Michael Broihahn, CFA
2009 Modular Level I, Volume 3, pp. 312-318
"Financial Statement Analysis: Applications," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn CFA
2009 Modular Level I, Volume 3, pp. 599-601
Study Session 9-35-e, f, g, 10-42-e
Analyze the financial statements of companies using different inventory accounting methods to compare and describe the effect of the different methods on cost of goods sold, inventory balances, and other financial statement items; and compute and describe the effects of the choice of inventory method on profitability, liquidity, activity, and solvency ratios.
Calculate adjustments to reported financial statements related to inventory assumptions in order to aid in comparing and evaluating companies.
Discuss the reasons that a LIFO reserve might decline during a given period and discuss the implications for financial analysis.
Determine and justify appropriate analyst adjustments to a company's financial statements to facilitate comparison with another company.

The negative change in the LIFO reserve would increase the cost of goods sold under FIFO compared to LIFO. FIFO COGS = LIFO COGS – Change in LIFO reserve.
The LIFO reserve has a positive balance so that FIFO inventory would be higher than LIFO inventory. FIFO inventory = LIFO inventory + LIFO reserve.

51. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

The year-end balances in a company's LIFO reserve are $56.8 million in the company's financial statements for both 2007 and 2008. For 2008, the measure that will *most likely* be the same regardless of whether the company uses the LIFO or FIFO inventory method is the:

A. inventory turnover.
B. gross profit margin.
C. amount of working capital.

Answer: B

"Inventories," Elbie Antonites, CFA, and Michael Broihahn, CFA
2009 Modular Level I, Volume 3, pp. 312-318
Financial Statement Analysis: Applications," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn CFA
2009 Modular Level I, Volume 3, pp. 599-601
Study Session 9-35-e, f, 10-42-e
Analyze the financial statements of companies using different inventory accounting methods to compare and describe the effect of the different methods on cost of goods sold, inventory balances, and other financial statement items; and compute and describe the effects of the choice of inventory method on profitability, liquidity, activity, and solvency ratios.
Calculate adjustments to reported financial statements related to inventory assumptions in order to aid in comparing and evaluating companies.
Determine and justify appropriate analyst adjustments to a company's financial statements to facilitate comparison with another company.

The LIFO reserve did not change from 2007 to 2008. Without a change in the LIFO reserve, cost of goods sold would be the same under both methods. Sales are always the same for both; so gross profit margin would be the same in 2008. The FIFO inventory would be higher because the LIFO inventory and LIFO reserve are added to compute FIFO inventory. Because the inventory balances would be different under FIFO, inventory turnover, and net working capital would also be different under FIFO.

52. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

An analyst gathers the following information about a company:

Shares of common stock outstanding	1,000,000
Net income for the year	$1,500,000
Par value of convertible bonds with a 4 percent coupon rate	$10,000,000
Par value of cumulative preferred stock with a 7 percent dividend rate	$2,000,000
Tax rate	30%

The bonds were issued at par and can be converted into 300,000 common shares. All securities were outstanding for the entire year. Diluted earnings per share is *closest* to:

A. $1.05.
B. $1.26.
C. $1.36.

Answer: B

"Understanding The Income Statement", Thomas R. Robinson, CFA, Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp. 165-171
Study Session 8-32-h
Describe the components of earnings per share and calculate a company's earnings per share (both basic and diluted earnings per share) for both a simple and complex capital structure.

Dividends of $140,000 (0.07 x 2,000,000) should be deducted from net income to determine the amount available to common shareholders: $1,360,000 = (1,500,000 – 140,000). Basic EPS would be $1,360,000 / 1,000,000 or $1.36 per share. Diluted EPS would consider the convertible bonds if they were dilutive. Interest on the bonds is $400,000 and the after-tax amount add back to net income is $400,000 (1-.30) = $280,000. Diluted EPS, assuming conversion, is ($1,360,000 + 280,000) / (1,000,000 +300,000) = 1,640,000/1,300,000= $1.26 per share. The bonds are dilutive.

53. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

    At the beginning of the year, two companies issued debt with the same market rate, maturity date, and total face value. One company issued coupon-bearing bonds at par and the other company issued zero-coupon bonds. All other factors being equal for that year, compared with the company that issued par bonds, the company that issued zero-coupon debt will *most likely* report:

    A. higher cash flow from operations but not higher interest expense.
    B. both higher cash flow from operations and higher interest expense.
    C. neither higher cash flow from operations nor higher interest expense.

    Answer: A

    "Long-term Liabilities and Leases" Elizabeth Gordon and R. Elaine Henry, CFA
    2009 Modular Level I, Volume 3, pp. 430-433
    Study Session 9-38-a
    Compute the effects of debt issuance and amortization of bond discounts and premiums on financial statements and ratios.

    When a company issues a zero-coupon bond, cash flow from operations is overstated over the life of the bond. Interest expense is recorded for income statements purposes, but is added back in the statement of cash flows as a non-cash adjustment to cash flow from operations.

54. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

    Which of the following is the *simplest* way for a company to increase its reported operating cash flow?

    A. Record sales on a bill-and-hold basis.
    B. Slow down the rate of payment to suppliers.
    C. Use a third party financial institution to pay suppliers.

    Answer: B

    "Accounting Shenanigans on the Cash Flow Statement," Marc A. Siegel
    2009 Modular Level I, Volume 3, pp. 568-569
    Study Session: 10-41
    The candidate should be able to analyze and discuss the following ways to manipulate the cash flow statement:

- stretching out payables
- financing of payables
- securitization of receivables
- using stock buybacks to offset dilution of earnings.

Slowing down the rate or payments to suppliers is the simplest way to increase reported operating cash flow.

55. When the financial statements materially depart from accounting standards and are not fairly presented, the audit opinion would be a(n):

A. adverse opinion.
B. qualified opinion.
C. disclaimer of opinion.

Answer: A

"Financial Statement Analysis: An Introduction," Thomas R. Robinson, CFA, Jan Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp.18-21
Study Session: 7-29-d
Discuss the objective of audits of financial statements, the types of audit reports, and the importance of effective internal controls.

An adverse opinion occurs when the financial statements materially depart from accounting standards and are not fairly presented. A qualified opinion is one in which there is some limitation or exception to accounting standards.

56. An issue subject to a vote at a stockholders' meeting is presented in a(n):

A. interim report.
B. proxy statement.
C. management statement of responsibility.

Answer: B

"Financial Statement Analysis: An Introduction," Thomas R. Robinson, CFA, Jan Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, p.23
Study Session: 7-29-e
Identify and explain information sources other than annual financial statements and supplementary information that analysts use in financial statement analysis.

Proxy statements are prepared and distributed to shareholders on matters that are to be put to a vote at shareholder meetings.

57. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

A company acquires a manufacturing facility in which it will produce toxic chemicals. The cost of the facility (exclusive of the underlying land) is $25 million and it is expected to provide a 10-year useful life, after which time the company will demolish the building and restore the underlying land. The cost of this restoration and cleanup is estimated to be $3 million at that time. The facility will be amortized on a straight-line basis. The company's discount rate associated with this obligation is 6.25 percent. The total expense that will be recorded in the first year associated with the asset retirement obligation on this property is *closest to*:

A. $163,618.
B. $224,945.
C. $265,879.

Answer: C

"Long-Lived Assets," R. Elaine Henry, CFA and Elizabeth Gordon
2009 Modular Level I, Volume 3, pp. 357-361
Study Session 9-36-g
Discuss the liability for closure, removal, and environmental effects of long-lived operating assets, and discuss the financial statement impact and ratio effects of that liability.

The PV of the future cleanup costs = 1,636,183 (FV = 3,000,000; N = 10; I/Y = 6.25; PMT = 0; CPT PV). The firm will record asset retirement costs of $1,636,183 as part of the cost of the property and a corresponding ARO liability of $1,636,183.
The asset retirement costs will be amortized at the same rate as the property (10 years, straight-line) and an accretion expense representing the change in the ARO liability will also arise.

Depreciation Expense:	1/10 x 1,636,183	163,618
Accretion Expense	6.25% x 1,636,183	102,261
Total Expense		265,879

58. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

A company receives a payment of $10,000 on 1 December, for rent on a property for December and January. On receipt, they correctly record it as cash and unearned revenue. If at 31 December, their year-end, they failed to make an adjusting entry related to this payment, ignoring taxes, what is the effect on the financial statements for the year?

A. Assets are overstated by $5,000 and Liabilities are overstated by $5,000
B. Assets are overstated by $5,000 and Owner's equity is overstated by $5,000
C. Liabilities are overstated by $5,000 and Owners' equity is understated by $5,000

Answer: C

"Financial Reporting Mechanics," Thomas R. Robinson, CFA, Hennie van Greuning, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, p.64
Study Session: 7-30-e
Explain the need for accruals and other adjustments in preparing financial statements.

The company should have made an adjusting entry to reduce the Unearned revenue account (a liability) by $5,000 and increase Revenue, (and hence net income and retained earnings) by $5,000. As the company failed to make the adjusting entry the liabilities are overstated and owners' equity is understated.

59. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

An analyst gathers the following information from a company's accounting records (all figures in thousands):

Assets, 31 December 2008	$5,250
Liabilities, 31 December 2008	2,200
Contributed capital, 31 December 2008	1,400
Retained earnings, 1 January 2008	800
Dividends declared during 2008	200

The analyst's estimate of net income ($ thousands) for 2008 is *closest* to:

A. 650.
B. 850.
C. 1,050.

Answer: C

"Financial Reporting Mechanics," Thomas R. Robinson, CFA, Hennie van Greuning, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp.38-40
Study Session: 7-30-c, f
Explain the accounting equation in its basic and expanded forms.
Prepare financial statements, given account balances or other elements in the relevant accounting equation, and explain the relationships among the income statement, balance sheet, statement of cash flows, and statement of owners' equity.

Total assets = liabilities + owner's equity.
Owner's equity = $5,250– 2,200= 3,050.
Owners equity = contributed capital + ending retained earnings.
Ending retained earnings = 3,050– 1,400= 1,650.
Ending retained earnings = beginning retained earnings + net income – dividends.
1,650= 800 + net income – 200;
Net income = $1,050

60. Which of the following is *least likely* to be a characteristic of an effective financial reporting framework?

A. Consistency.
B. Comparability.
C. Comprehensiveness.

Answer: B

"Financial Reporting Standards," Thomas R. Robinson, CFA, Hennie van Greuning, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, p.115, 118
Study Session: 7-31-g
Identify the characteristics of a coherent financial reporting framework and barriers to creating a coherent financial reporting network.

The characteristics of a coherent financial reporting network are transparency, comprehensiveness and consistency. Comparability is a qualitative characteristic of financial statements.

61. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

An analyst gathers the following data about a company and the industry in which it operates:

	Company ($ millions)	Industry Averages as a percent of sales
Revenues	5,000	100%
Cost of goods sold	2,100	45%
Operating expenses	1,750	32%
Profit margin	475	9.5%

Which of the following conclusions is *most* reasonable? Compared to the industry, the company:

A. has the same cost structure and net profit margin.
B. has a lower gross profit margin and spends more on its operating costs.
C. is better at controlling product costs, but less effective at controlling operating costs.

Answer: C

"Understanding the Income Statement," Thomas R. Robinson, CFA, Jan Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp.175-177
Study Session: 8-32-j
Evaluate a company's financial performance using common-size income statements and financial ratios based on the income statement.

	Company	**Industry**	**Conclusion**
Gross Profit	5,000-2,100 = 2,900		
Gross Profit Margin	2,900/5,000 = 58%	1-0.45 = 55%	The company's cost of goods sold, or product costs, is lower; it is controlling them better.
Operating Costs	1,750/5,000 = 35%	32%	The company's operating costs are higher. It is not as effective at controlling its operating costs as the industry.

62. A European based company follows IFRS (International Financial Reporting Standards) and capitalizes new product development costs. During 2008 they spent €25 million on new product development and reported an amortization expense related to a prior year's new product development of €10 million. Other information related to 2008 is as follows:

	€ millions
Net income	225
Cash flow from operations	290

An analyst would like to compare the European company to a similar U.S. based company and has decided to adjust their financial statements to U.S. GAAP. Under U.S. GAAP, and ignoring tax effects, the cash flow from operations (€ millions) for the company would be *closest* to:

A. 265.
B. 275.
C. 290.

Answer: A

"Long-Lived Assets," R. Elaine Henry, CFA and Elizabeth A. Gordon
2009 Modular Level I, Volume 3, pp.341-344
Study Session: 9-36- b, c

Compute and describe the effects of capitalizing versus expensing on net income, shareholders' equity, cash flow from operations, and financial ratios including the effect on the interest coverage ratio of capitalizing interest costs.
Explain the circumstances in which software development costs and research and development costs are capitalized

If all development costs had been expensed then net income would be reduced by the amount spent, and increased by the amortization of the previously capitalized amounts: 225 – 25 + 10 = 210 million. CFO would be lower by the amount spent on development 290 – 25 = 265 million. Note: The amortization of previous development costs is a non-cash expense so does not affect cash flow.

63. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

    Which of the following *best* describes taxes payable?

    A. Total liability for current and future taxes.
    B. Tax return liability resulting from current period taxable income.
    C. Actual cash outflow for income taxes including payments (refunds) for other years.

    Answer: B

    "Income Taxes," Elbie Antonites, CFA, and Michael Broihahn, CFA
    2009 Modular Level I, Volume 3, p. 385
    Study Session: 9-37-a
    Explain the differences between accounting profit and taxable income, and define key terms including deferred tax assets, deferred tax liabilities, valuation allowance, taxes payable, and income tax expense.

    Taxes payable is the current liability resulting from the current period taxable income based on the company's tax rate and the portion of its income that is subject to income taxes under the tax laws of the jurisdiction.

64. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

A company is considering issuing either a straight coupon bond or a coupon bond with warrants attached. The proceeds from either issue would be the same. If the firm issues the bond with warrants attached instead of the straight coupon bond, which of the following ratios will *most likely* be lower for the bond with warrants?

A. Return on assets.
B. Debt to equity ratio
C. Interest coverage ratio.

Answer: B

"Long-term Liabilities and Leases," Elizabeth Gordon and R. Elaine Henry, CFA
2009 Modular Level I, Volume 3, pp. 440-442
Study Session 9-38-e
Describe two types of debt with equity features (convertible debt and debt with warrants) and calculate the effect of issuance of such instruments on a company's debt ratios**.**

The portion of the proceeds attributable to the warrants would be classified as equity, thus the portion classified as a liability would be smaller (lower). Therefore the debt-to-equity ratio will be lower, for the bonds with warrants.
EBIT would be the same regardless of financing method; the coupon on the bond with warrants attached would be lower if the two issues provided the same proceeds, so the interest coverage would be higher for a bond with warrants attached.
Since interest expense would be lower for a bond with warrants attached, Net Income would be higher and ROA would be higher.

65. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

An analyst is forecasting EPS for a company. She prepares the following common sized data from its recent annual report and estimates sales for 2009.

	2009 forecast	**2008 actual**	**2007 actual**
Sales $ millions	2,250.0	2,150.0	1,990.0
Sales as % of sales		100.00%	100.00%
Cost of goods sold		45.00%	45.00%
Operating Expenses		40.00%	40.00%
Interest expense		3.72%	4.02%
Restructuring expense			7.20%
Pre-tax margin		11.28%	3.78%
Taxes (35%)		3.95%	1.32%
Net Income		7.33%	2.46%

The capital structure of the company has not changed and the company has no short-term interest bearing debt outstanding. The projected net income (in $ millions) for 2009 is *closest* to:

A. 162.8.
B. 164.9.
C. 167.4.

Answer: C

"Understanding the Income Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp.175-177
"Financial Statement Analysis: Applications," Thomas R. Robinson, CFA, Jan Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp.583-587
Study Session: 8-32-j, 10-42-b
Evaluate a company's financial performance using common-size income statements and financial ratios based on the income statement.
Prepare a basic projection of a company's future net income and cash flow.

The cost of goods sold and operating expenses are constant over the two-year period and they can reasonably be used to forecast 2009. Interest expense is declining as a percent of sales, implying it is a fixed cost. Conversion into dollars for each year shows what interest expense has been; 2008 =$80 (3.72% x 2,150); 2007=$80 (4.02 x 1,990) and that would be a reasonable projected amount to use. The restructuring charge should not be included as it is a non-recurring item. The tax rate, 35%, is given.

Sales	$2,250.00
COGS (45%)	1,012.50
Operating expenses (40%)	900.00
Interest expense	80.00

Pretax margin	257.50
Tax (35%)	90.1
Net Income	167.40

66. The unrealized gains and losses arising from changes in the market value of available-for-sale securities are reported under U.S. GAAP and International Financial Reporting Standards (IFRS) in the:

    A. equity section for both.
    B. equity section for U.S. GAAP and the income statement for IFRS.
    C. income statement for U.S. GAAP and the equity section for IFRS.

    Answer: A

    "Understanding the Income Statement," Thomas R. Robinson, CFA, Jan Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
    2009 Modular Level I, Volume 3, p.179-180
    "Understanding the Balance Sheet," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
    2009 Modular Level I, Volume 3, pp 217-219
    "International Standards Convergence," Thomas R. Robinson, CFA, Jan Hennie van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
    2009 Modular Level I, Volume 3, pp.624-625
    Study Session: 8-32-k, 8-33-g, 10-43-a
    State the accounting classification for items that are excluded from the income statement but affect owners' equity, and list the major types of items receiving that treatment. Demonstrate the appropriate classifications and related accounting treatments for marketable and non-marketable financial instruments held as assets or owed by the company as liabilities.
    Identify and explain the major international accounting standards for each asset and liability category on the balance sheet and the key differences from U.S. generally accepted accounting principles (GAAP).

    Under both U.S. GAAP and IFRS the unrealized gains and losses arising from carrying available-for-sale securities at market value are reported in equity as part of accumulated other comprehensive income.

67. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

A company records the following two transactions:

I.	€300,000 of rental revenue is received in advance on a two-year lease. It is taxed on a cash basis, but deferred for accounting purposes.
II.	€500,000 of installment sales. No payments are required for one year after which collections will be made on an equal basis over 12 months and taxed on a cash basis. The entire sale and related profit will be recognized for financial reporting purposes in the year of sale.

Which of the above transactions will *most likely* give rise to a deferred tax liability on the balance sheet?

A. I only.
B. II only.
C. Both I and II.

Answer: B

"Income Taxes," Elbie Antonites, CFA, and Michael Broihahn, CFA
2009 Modular Level I, Volume 3, pp. 385-386, 391-400
Study Session 9-37-b, d
Explain how deferred tax liabilities and assets are created and the factors that determine how a company's deferred tax liabilities and assets should be treated for the purpose of financial analysis.
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.

II represents a deferred tax liability: The accounts receivable for financial statement purposes has a carrying value of €500,000 but with a tax base of €0. The temporary difference creates a deferred tax liability. Alternatively, accounting income tax expense exceeded taxes payable and the firm expects to eliminate this difference over the course of future operations.
Item I represents a deferred tax asset: Rent received in advance creates a liability on the financial statements with a carrying value of €300,000 but with a tax base of €0. The temporary difference creates a deferred tax asset. Alternatively an excess amount has been paid for income taxes based on the cash received (taxable income exceeded accounting income) and the company expects to recover this difference during the course of future operations.

68. Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

On 1 January 2008 a company enters into a lease agreement to lease a piece of machinery as the lessor with the following terms:

Annual lease payment due 31 December	$75,000
Lease term	6 years
Estimated useful life of the machine	7 years
Estimated salvage value of the machine	$0
Carrying value (cost) of leased asset	$300,000
Implied interest rate on lease	7%
The firm is reasonably assured of the collection of the lease payments.	

The total affect on 2008 pre-tax income for the lessor from this lease is *closest* to:

A. $32,143.
B. $75,000.
C. $82,519.

Answer: C

"Long-term Liabilities and Leases," Elizabeth Gordon and R. Elaine Henry, CFA
2009 Modular Level I, Volume 3, p. 458-464
Study Session: 9-38-g, h
Determine the effects of finance and operating leases on the financial statements and ratios of the lessees and lessors.
Distinguish between sales-type leases and a direct financing lease and determine the effects on the financial statements and ratios of the lessors.

This is a sales type lease: the lease period covers more than 75% of its useful life (6/7=85.7%) and the asset is on its books at less than the present value of the lease payments ($357,490) (PMT = $75,000, N=6, i=7%). The firm must have acquired or manufactured the asset if it is recorded at less than the present value of the lease payments.
The income in the first year will therefore consist of the gross profit on the sale (357,490-300,000)=57,490 plus interest revenue from financing the lease = 25,024(see below)

Year	Start Balance	Interest	Payment	End Balance
1	357,490	7%x357,490=25,024	75,000	357,490-(75,000-25,024)=307,514

Total income = 57,490 + 25,024 = 82,514

Questions 69 through 78 relate to Corporate Finance

69. Which of the following is *least likely* classified as an opportunity cost?

    A. The cash savings related to adopting a new production process.
    B. The cash flows generated by an old machine that is to be replaced.
    C. The market value of vacant land to be used for a distribution center.

    Answer: A

    "Capital Budgeting," John D. Stowe, CFA, and Jacques R. Gagné, CFA
    2009 Modular Level I, Volume 4, pp. 8-10
    Study Session 11-44-b
    Discuss the basic principles of capital budgeting, including the choice of the proper cash flows and determining the proper discount rate.

    The cash savings related to adopting a new production process is an incremental cash flow, not an opportunity cost.

70. A capital project with a net present value (NPV) of $23.29 has the following cash flows:

Year	0	1	2	3	4	5
Cash flow (€)	-100	30	40	40	30	20

    The internal rate of return (IRR) for the project is *closest* to:

    A. 10%.
    B. 12%.
    C. 19%.

    Answer: C

    "Capital Budgeting," John D. Stowe, CFA, and Jacques R. Gagné, CFA
    2008 Modular Level I, Volume 4, pp. 12-19
    Study Session 11-44-d
    Calculate and interpret the results using each of the following methods to evaluate a single capital project: net present value (NPV), internal rate of return (IRR), payback period, discounted payback period, average accounting rate of return (AAR), and profitability index (PI).

    Using a calculator, enter CF_0 = –100, CF_1 = 30, CF_2 = 40, CF_3 = 40, CF_4 = 30, CF_5 =

20, solve for IRR. The IRR is 19.25%

71. Two mutually exclusive projects have conventional cash flows, but one project has a larger NPV while the other project has a higher IRR. Which of the following *least likely* explains this conflict?

A. Reinvestment rate assumption.
B. Size of the projects' initial investments.
C. Risk of the projects as reflected in the required rate of return.

Answer: C

"Capital Budgeting," John D. Stowe, CFA, and Jacques R. Gagné, CFA
2009 Modular Level I, Volume 4, pp. 17-23
Study Session 11-44-e
Explain the NPV profile, compare and contrast the NPV and IRR methods when evaluating independent and mutually-exclusive projects, and describe the problems that can arise when using an IRR.

Conflicting decision rules based on the NPV and IRR methods are related to the reinvestment rate assumption, the timing of the cash flows, or the scale of the projects. Differing required rates of return are not related to conflicting NPV and IRR decisions.

72. An analyst gathers the following information about the cost and availability of raising various amounts of new debt and equity capital for a company:

Amount of new debt (in millions)	Cost of debt (after tax)		Amount of new equity (in millions)	Cost of equity
≤ €4.0 > €4.0	4% 5%		≤ €5.0 > €5.0	13% 15%

The company's target capital structure is 60 percent equity and 40 percent debt. If the company raises €9.5 million in new financing, the marginal cost of capital is *closest* to:

A. 9.8%.
B. 10.6%.
C. 11.0%.

Answer: B

"Cost of Capital," Yves Courtois, CFA, Gene C. Lai, and Pamela P. Peterson, CFA
2009 Modular Level I, Volume 4, pp. 62-65
Study Session 11-45-k
Describe the marginal cost of capital schedule, explain why it may be upward-sloping with respect to additional capital, and calculate and interpret its break-points.

The break-points for debt and equity are €10 million (€4.0 million / 0.40) and €8.33 million (€5.0 million / 0.60), respectively. The cost of debt and equity if the firm raises €9.5 million in new financing will be 4% and 15%, respectively, because €9.5 million is below the debt breakpoint and above the equity breakpoint. The marginal cost of capital = 0.40 × 4% + 0.60 × 15% = 10.6%.

73. An analyst gathers the following information for a company:

Liquidity measure	Company
Inventory turnover	20.7
Accounts payable turnover	14.1
Accounts receivable turnover	12.5

The company's operating cycle is *closest* to:

A. 20.9 days.
B. 33.2 days.
C. 46.8 days.

Answer: C

"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn
2009 Modular Level I, Volume 3, pp. 506-509
"Working Capital Management," Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and Pamela P. Peterson, CFA
2009 Modular Level I, Volume 4, pp. 87-93
Study Session 11-46-a, b
Calculate, classify and interpret activity, liquidity, solvency, profitability, and valuation ratios.
Calculate and interpret liquidity measures using selected financial ratios for a company and compare it with peer companies.
Evaluate overall working capital effectiveness of a company, using the operating and cash conversion cycles, and compare its effectiveness with other peer companies.

Operating cycle = days inventory outstanding + days receivables outstanding
Days inventory outstanding = 365 / inventory turnover = 17.63 days

Days receivables outstanding = 365 / accounts receivable turnover = 29.2 days
Operating cycle = 17.63 days + 29.2 days = 46.8 days

74. A company is offered trade credit terms of 2/10, net 45. The implicit cost of failing to take the discount and instead paying the account in 45 days is *closest* to:

A. 21.28%.
B. 23.10%.
C. 23.45%.
Answer: C

"Working Capital Management," Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and Pamela P. Peterson, CFA
2009 Modular Level I, Volume 4, pp. 118-119
Study Session 11-46-f
Assess the performance of a company's accounts receivable, inventory management, and accounts payable functions against historical figures and comparable peer company values.

The cost of trade credit if paid on day 45 = $(1 + 2 / 98)^{365/35} – 1$ = 23.45%.

ITEM COMMENTS:
PJY 27Sep08 Review group wanted to replace this Q because compounded rate is unfair to candidates. Upon further discussion with Dot Kelly & CFA staff, the question stays because eliminating would miss an opportunity to educate candidates about the proper method to calculate the cost of failing to take a discount offered. This question could easily appear on the live exam and candidates need this opportunity to learn the correct calculation.

75. A company plans to issue €2,500,000 (face value) of commercial paper for one month. The company is quoted a rate of 5.88 percent with a dealer's commission of 1/8 percent and a backup line cost of 1/4 percent, both of which will be assessed on the face value. The effective cost of the financing is *closest* to:

A. 6.03%.
B. 6.16%.
C. 6.29%.

Answer: C

"Working Capital Management," Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and Pamela P. Peterson, CFA

2009 Modular Level I, Volume 4, pp. 124-126, Example 7
Study Session 11-46-g
Evaluate the choices of short-term funding available to a company and recommend a financing method.

CP cost = [(interest + dealer's commissions + back-up costs) / net proceeds] × 12
Net proceeds = €2,500,000 – (0.0588 × €2,500,000 × 1/12) = €2,487,750
Interest + dealer's commissions + back-up costs = (0.0588 + 0.00125 + 0.0025) × €2,500,000 × 1/12 = 0.6255 × €2,500,000 × 1/12 = €13,031
CP cost = (13,031 / 2,487,750) × 12 = 6.29%

76. Regarding corporate governance, which of the following *most likely* would be a reason for concern when evaluating an independent board member's qualifications? The board member:

A. has served on the board for 14 years.
B. owns 1,000 shares of the corporation's equity.
C. has formerly served on the boards of several successful companies.

Answer: A

"The Corporate Governance of Listed Companies: A Manual for Investors"
2009 Modular Level I, Volume 4, pp. 162-163
Study Session 11-48-d
Identify factors that indicate a board and its members possess the experience required to govern the company for the benefit of its shareowners.

Such long-term participation may enhance the individual board member's knowledge of the company, but it also may cause the board member to develop a cooperative relationship with management that could impair his/her willingness to act in the best interests of shareowners.

77. Which of the following is *least likely* to concern an investor evaluating a corporation's shareowner rights provisions?

A. Shareowners may nominate board members.
B. Shares held by the founding family have supernormal voting rights.
C. To ensure accuracy, company executives tabulate and verify shareowner voting.

Answer: A

"The Corporate Governance of Listed Companies: A Manual for Investors"

2009 Modular Level I, Volume 4, pp. 178-183
Study Session 11-48-g
Evaluate, from a shareowner's perspective, company policies related to voting rules, shareowner sponsored proposals, common stock classes, and takeover defenses.

The ability to nominate one or more individuals to the board can prevent erosion of shareowner value. Shareowners may be able to force the board or management to take steps to address shareowner concerns.

78. A company's optimal capital budget is *best* described as the amount of new capital required to undertake all projects with an internal rate of return greater than the:

A. marginal cost of capital.
B. cost of new debt capital.
C. weighted average cost of capital.

Answer: A

"Cost of Capital," Yves Courtois, CFA, Gene C. Lai, and Pamela P. Peterson, CFA
2009 Modular Level I, Volume 4, pp. 41-43
Study Session 11-45-d
Explain how the marginal cost of capital and the investment opportunity schedule are used to determine the optimal capital budget.

The optimal capital budget is the amount of new capital required to undertake all investment projects with an IRR greater than the marginal cost of capital.

Questions 79 through 90 relate to Equity Investments

79. Which of the following is the *least* accurate rationale to justify the use of price-to-book value (P/B) ratio as a measure of relative valuation of companies or common stocks?

A. P/B is a useful measure of value for firms that are not expected to continue as a going concern.
B. Compared to P/E, the P/B ratio is not influenced by such accounting effects as expensing a capital investment as opposed to capitalizing it.
C. P/B is particularly appropriate to value companies primarily composed of liquid assets, for example, those in the financial services industry.

Answer: B

"Introduction to Price Multiples," John D. Stowe, CFA, Thomas R. Robinson, CFA, Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
2009 Modular Level I, Volume 5, pp. 188-190
Study Session 14-59-a
Discuss the rationales for, and the possible drawbacks to, the use of price to earnings (P/E), price to book value (P/BV), price to sales (P/S), and price to cash flow (P/CF) in equity valuation.

It is incorrect to say that P/B correctly reflects a company's value. The historical cost basis of assets in P/B ratio is a drawback, not a rationale for using it as a measure of relative valuation.

80. An analyst is creating a new stock market index that is not affected by stock splits. The index the analyst is *least likely* to develop is:

A. unweighted.
B. price-weighted.
C. value-weighted.

Answer: B

"Security-Market Indexes," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, pp. 42-46
Study Session 13-53-a
Compare and contrast the characteristics of, and discuss the source and direction of bias exhibited by, each of the three predominant weighting schemes used in constructing stock market indexes, and compute a price-weighted, value-weighted and un-weighted index series for three stocks.

A price-weighted index, such as the Dow Jones Industrial Average, requires adjustment for stock splits. It is computed by summing the prices of individual stocks and dividing by a divisor that is adjusted for stock splits such that the index value is the same before and after the split.

81. An analyst gathers the following information about a company:

Common stock $1.50 par value – Authorized	5,000,000 shares
-- Issued	4,000,000 shares
Additional paid-in-capital	$20,000,000
Retained earnings	$5,000,000
Treasury stock (500,000 shares)	$10,000,000
Current price per share	$21

The price-to-book (P/B) ratio of the company is *closest* to:

A. 2.31.
B. 3.50.
C. 4.20.

Answer: B

"Introduction to Price Multiples," John D. Stowe, CFA, Thomas R. Robinson, CFA, Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
2009 Modular Level I, Volume 5, pp. 191-193
Study Session 14-59-b
Calculate and interpret P/E, P/BV, P/S, and P/CF.

Number of issued and outstanding shares = 4 m – 0.5 m = 3.5 m; (Issued – Treasury Stock)
BV per share = 4m shares (1.50) + $20 m + $5 m - $10 m = $21 m / 3.5 m sh. = $6.00
Price-to-book value = $21 / $6.00 = 3.50

82. A call market is *least likely* characterized as a market:

A. with bid-ask prices posted by dealers.
B. where buy-sell orders are cleared at a single equilibrium price.
C. with participation by a small number of active investors-traders.

Answer: A

"Organizing and Functioning of Securities Markets," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, pp. 14-15
Study Session 13-52-c
Distinguish between call and continuous markets.

In a call market traders/investors indicate their bids and asks for stocks and they are not posted by dealers. Also, a call market is not a dealer or quote-driven market.

83. The annual report of a company as at the end of its first year of its operation contains the following data:

Common stock $0.50 par value – Authorized (2,500,000 shares)	$ 1,250,000
– Issued (2,000,000 shares)	$ 1,000,000
Additional paid-in-capital	$10,000,000
Retained earnings	$ 4,000,000
Current price per share	$30

The company's ending inventories using LIFO are valued at $1,500,000 and a footnote to financial statements reports inventories valued using FIFO would be $1,900,000. The company's tax rate is 30 percent. The FIFO adjusted price-to-book value of the company is *closest* to:

A. 3.93.
B. 4.00.
C. 4.08.

Answer: A

"Introduction to Price Multiples," John D. Stowe, CFA, Thomas R. Robinson, CFA, Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
2009 Modular Level I, Volume 5, pp. 194-196
Study Session 14-59-b
Calculate and interpret P/E, P/BV, P/S, and P/CF.

Inventory Adjustment = $400,000 x 0.70 = $280,000: (FIFO – LIFO values) x (1-Tax rate)
BV per share = $1 m + $10 m + $4 m + $0.28 m = $15.28 / 2 m sh. = $7.64.
Price-to-book value = $30 / $7.64 = 3.93

84. An analyst gathers the following data about a company with a double-digit growth rate that is expected to continue for three more years:

Current year's dividend per share	€2.00
Growth rate in dividend during the next three years	30% in each of the years 1 and 2; 20% in year 3
Growth rate in dividend for year 4 and beyond	8%
Weighted average cost of capital	12%
Cost of equity capital	15%

The best estimate of the company's value per share is *closest* to:

A. €48.68.
B. €50.68
C. €85.93

Answer: A

"An Introduction to Security Valuation," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, pp. 132-135
Study Session 14-56-c
Calculate and interpret the value both of a preferred stock and a common stock using the dividend discount model (DDM).

Time Period	Dividend	PVIF @ 15%	Present Value
1	2 x 1.30 = 2.60	0.8696	€ 2.26
2	2 x 1.30^2 = 3.38	0.7561	€ 2.56
3	2 x 1.30^2 x 1.20 = 4.06	0.6575	€ 2.67
4 & Beyond	V_3 = (4.06 x 1.08) / (0.15 – 0.08) = 62.64	0.6575	€41.19
Value per share			€48.68

85. An equity fund manager gathers the following data in order to assess the investment potential of a company and its stock:

	Company	**Industry Average**
Weighted average cost of capital (WACC)	14%	12%
Return on Assets (ROA)	20%	15%
Dividend Yield	0 %	1.2%
Consensus estimate of stock's value	$53	N/A
Current price of company's stock	$50	N/A

Based on the above information, which of the following statements *most* accurately describes the company and its stock? The company is a:

A. growth company and its stock is a growth stock.
B. growth company and its stock is a speculative stock.
C. speculative company and its stock is a growth stock.

Answer: A

"Company Analysis and Valuation," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, pp.160-162
Study Session 14-58-a
Differentiate between 1) a growth company and a growth stock, 2) a defensive company and a defensive stock, 3) a cyclical company and a cyclical stock, 4) a speculative company and a speculative stock, and 5) a value stock and a growth stock.

The company is a growth company since the spread between ROA and WACC is larger than the industry average and its dividend yield is 0% compared to the industry average of 1.2%. The company's stock is a growth stock considering its under-valuation. A speculative stock, on the other hand, would be overvalued.

86. Free cash flow to equity is *most* accurately described as operating free cash flow adjusted for:

A. only interest payments to debt holders.
B. payments to both debt holders (interest and principal) and preferred stockholders.
C. both interest and principal payments to debt holders, but not payments to preferred stockholders.

Answer: B

"Understanding the Cash Flow Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn, CFA
2009 Modular Level I, Volume 3, pp. 279-280
"An Introduction to Security Valuation," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, p. 135
Study Session 8-34-i, 14-56-g
Explain and calculate free cash flow to the firm, free cash flow to equity, and other cash flow ratios.
Describe a process for developing estimated inputs to be used in the DDM, including the required rate of return and expected growth rate of dividends.

Free cash flow to equity is derived after adjusting the operating free cash flow for payments to debt holders (interest and principal) as well as preferred stockholders.

87. Assuming efficient markets and a lack of access to superior analysts, which of the following is the *least* important activity in managing portfolios?

A. Minimizing total transaction costs.
B. Diversifying completely on a global basis.
C. Paying close attention to the monetary policy environment.

Answer: C

"Efficient Capital Markets," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, pp. 87-89
Study Session 13-54-c
Explain the implications of stock market efficiency for technical analysis, fundamental analysis, the portfolio management process, the role of the portfolio manager, and the rationale for investing in index funds.

In efficient markets and without access to superior analysts, portfolio management calls for minimizing the transaction costs and diversifying completely on a global basis. Paying attention to the monetary policy and evaluating its implications for portfolio management is appropriate for portfolio managers with access to superior analysts.

88. An analyst gathers the following data about a company in order to estimate its price/earnings (P/E) ratio.

Expected dividend payout ratio	40%
Return on equity	15%
Required rate of return	12%
Stock's current market price	$75

The P/E ratio is *closest* to:

A. 6.7 x.
B. 13.3 x.
C. 20.0 x.

Answer: B

"An Introduction to Security Valuation," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, p. 137, 146-147
Study Session 14-56-d, g
Show how to use the DDM to develop an earnings multiplier model, and explain the factors in the DDM that affect a stock's price-to-earnings (P/E) ratio.
Describe a process for developing estimated inputs to be used in the DDM, including the required rate of return and expected growth rate of dividends.

Growth rate = g = RR x ROE = (1 - 0.40) x 15 = 9%;
$P/E_1 = D_1/E_1 \div (k - g) = 0.40 \div (0.12 - 0.09) = 13.33$

89. For growth companies which of the following components of ROE is *most likely* to decline first?

A. Profit margin.
B. Financial leverage.
C. Total assets turnover.

Answer: A

"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn
2009 Modular Level I, Volume 3, pp. 520-525

"An Introduction to Security Valuation," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, pp. 146-147
Study Session 10-39-e, 14-56-e
Demonstrate the application of and interpret changes in the component parts of the DuPont analysis (the decomposition of return on equity).
Estimate the dividend growth rate, given the components of the required return on equity and incorporating the earnings retention rate and current stock price.

For growth companies profit margin is one of the first ratios to decline due to increased competition and forced price cuttings.

90. Which of the following is *least likely* included in the assumptions of an informationally efficient securities market?

A. A large number of profit-maximizing participants analyze and value securities.
B. New information regarding securities comes to the market in a predictable manner.
C. Profit-maximizing investors adjust security prices rapidly to reflect the effect of new information.

Answer: B

"Efficient Capital Markets," Frank K. Reilly, CFA, and Keith C. Brown, CFA
2009 Modular Level I, Volume 5, p. 62-63
Study Session 13-54-a
Define an efficient capital market and describe and contrast the three forms of the efficient market hypothesis (EMH).

The assumption that the new information comes to the market in a predictable manner is an inaccurate statement. The correct assumption is that the new information comes to the market in a random fashion.

Questions 91 through 96 relate to Derivative Investments.

91. An investor takes a short position of 10 futures contracts at $90 on Day 0. The initial margin is $10 per contract. The maintenance margin is $5 per contract. On Day 1, the futures settlement price is $96 and on Day 2, the futures settlement price is $92. At the end of Day 2, the cash ending balance in the margin account is *closest* to:

A. $80.
B. $120.
C. $140.

Answer: C

"Futures Markets and Contracts," Don M. Chance
2009 Modular Level I, Volume 6, pp. 53-57
Study Session 17-69-c
Describe price limits and the process of marking to market, and compute and interpret the margin balance, given the previous day's balance and the change in the futures price.

C is correct. The calculations are shown below.

Day	Beginning Balance	Funds Deposited	Settlement	Price Change	Gain/Loss	Ending Balance
0	0	100	90	0	0	100
1	100	0	96	6	-60	40
2	40	60	92	4	40	140

92. The lower bound on a European call price is the greater of zero and:

A. the underlying price minus the exercise price.
B. the present value of the exercise price minus the underlying price.
C. the underlying price minus the present value of the exercise price.

Answer: C

"Option Markets and Contracts," Don M. Chance
2009 Modular Level I, Volume 6, pp. 98-101
Study Session 17-70-h
Calculate and interpret the lowest prices of European and American calls and puts based on the rules for minimum values and lower bounds.

European options cannot be exercised until maturity, so the exercise price is adjusted to reflect that the exercise price can be paid and the underlying received only at expiration.

93. A description *least likely* to explain put-call parity is:

A. A fiduciary call option strategy and a protective put option strategy for an underlying asset are equal in value.
B. A put is equivalent to a long call, a long position in the underlying asset, and a long position in the risk-free asset.
C. A call is equivalent to a long put, a long position in the underlying asset, and a short position in the risk-free asset.

Answer: C

"Option Markets and Contracts", Don M. Chance
2009 Modular Level I, Volume 6, pp. 106-110
Study Session 17-70-j
Explain put-call parity for European options, and relate put-call parity to arbitrage and the construction of synthetic options.

The put requires a short position in the underlying rather than a long position.

94. An investor goes long an FRA that expires in 30 days for which the underlying is 90-day LIBOR for a notional of $10 million. A dealer quotes this instrument at 4.5 percent. At expiration, 60-day LIBOR is 3.5 percent and 90-day LIBOR is 4 percent. The payment made at expiration is *closest* to:

A. $ 12,376 from the investor to the dealer
B. $ 12,376 from the dealer to the investor
C. $ 16,570 from the investor to the dealer

Answer: A

"Forward Markets and Contracts", Don M. Chance
2009 Modular Level I, Volume 6, pp. 40-43
Study Session 17-68-g
Calculate and interpret the payoff of an FRA and explain each of the component terms.

The underlying of an FRA is an interest payment. The investor is long the rate and will benefit if rates increase. Since rates decreased, the investor must pay the dealer:

$$\$10{,}000{,}000\left[\frac{(.04-.045)(90/360)}{1+.04(90/360)}\right]=\$(12{,}376)$$

95. A market participant has a view regarding the potential movement of a stock. He sells a customized over-the-counter put option on the stock when the stock is trading at \$38. The put has an exercise price of \$36 and the put seller receives \$2.25 in premium. The price of the stock is \$35 at expiration. The profit or loss for the put seller at expiration is:

A. \$(1.25)
B. \$1.25
C. \$2.25

Answer: B

"Risk Management Applications of Option Strategies", Don M. Chance
2009 Modular Level I, Volume 6, pp. 152-156
Study Session 17-72-a
Determine the value at expiration, profit, maximum profit, maximum loss, breakeven underlying price at expiration, and general shape of the graph of the strategies of buying and selling calls and puts, and indicate the market outlook of investors using these strategies.

Profit = max (0, -value of put at expiration + premium) = max (0, -(X-S) +premium) = -1+2.25 = \$1.25

96. An investor purchases a stock at \$60 and at the same time, sells a 3-month call on the stock. The short call has a strike price of \$65 and a premium of \$3.60. The risk-free rate is 4 percent. The breakeven underlying stock price at expiration is *closest* to:

A. \$56.40
B. \$60.80
C. \$61.40

Answer: A

"Risk Management Applications of Option Strategies", Don M. Chance
2008 Modular Level I, Volume 6, pp. 156-160
Study Session 17-72-b
Determine the value at expiration, profit, maximum profit, maximum loss, breakeven underlying price at expiration, and general shape of the graph of a covered call

strategy and a protective put strategy, and explain the risk management application of each strategy.

A covered call breakeven price equals the price paid for the stock less the premium received for the call. Breakeven = (S-c) = (60-3.60) = $56.40

Questions 97 through 108 relate to Fixed Income Investments.

97. If market interest rates rise, the price of a callable bond, compared to an otherwise identical option-free bond, will *most likely* decrease by:

    A. less than the option-free bond.
    B. more than the option-free bond.
    C. the same amount as the option-free bond.

    Answer: A

    "Risks Associated with Investing in Bonds," Frank J. Fabozzi
    2009 Modular Level I, Volume 5, p. 243
    Study Session 15-61-d
    identify the relationship among the price of a callable bond, the price of an option-free bond, and the price of the embedded call option.

    A callable bond's value is equal to an option-free bond less the value of the call option. As interest rates rise, the value of the call option decreases by a decreasing amount relative to the straight bond. The option-free bond also declines in value as interest rates rise, but this is offset by the decline in the value of the call option. Therefore, the price of a callable bond decreases by less than a comparable option-free bond.

98. A U.S. investor who purchases an option-free bond with a 7 percent coupon rate, maturing in 20 years, and issued by a U.S.-based company is *most likely* exposed to:

    A. volatility risk and credit risk.
    B. event risk and interest rate risk.
    C. volatility risk and yield curve risk.

    Answer: B

    "Risks Associated with Investing in Bonds," Frank J. Fabozzi
    2009 Modular Level I, Volume 5, pp. 240-261

Study Session 15-61-a
Explain the risks associated with investing in bonds.

The investor faces event risk in a corporate bond and interest rate risk in a long-dated, fixed coupon bond.

99. All else equal, an increase in expected yield volatility is *most likely* to result in an increase in the price of a(n):

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

Answer: A

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2009 Modular Level I, Volume 5, p. 260
Study Session 15-61-n
Explain how yield volatility affects the price of a bond with an embedded option and how changes in volatility affect the value of a callable bond and a putable bond.

An increase in expected yield volatility increases the price of an embedded option. The price of a putable bond will increase because the price of the putable bond is equal to the price of an option-free bond plus the value of the put option.

100. An analyst is evaluating the two bonds below:

	Bond A	Bond B
Coupon	6.90%	8.25%
Maturity	Oct 29, 2019	Nov 4, 2019
Callable	No	No
Price	$102.17	$102.39
Yield	6.60%	7.90%

Compared with Bond A, Bond B *most likely* will have:

A. less interest rate risk and more reinvestment risk.
B. less reinvestment risk and more interest rate risk.
C. more interest rate risk and more reinvestment risk.

Answer: A

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 242, 252-253
Study Session 15-61-c, i
Explain how features of a bond (e.g., maturity, coupon, and embedded options) and the level of a bond's yield affect the bond's interest rate risk;
Identify the factors that affect the reinvestment risk of a security and explain why prepayable amortizing securities expose investors to greater reinvestment risk than nonamortizing securities.

Since both securities have essentially the same maturity, all else the same, the bond with the lower coupon rate will have a higher sensitivity to changes in interest rates. The higher the yield on the bond, the more the reinvestment risk, because the investor must be able to reinvest at the same yield.

101. An analyst determined that if interest rates increase 120 basis points the price of a bond would be $89.70, but if interest rates decrease 120 basis points the price of that bond would be $99.30. If the initial price of the bond is $95.40, the approximate percentage price change for a 100 basis point change in yield is *closest* to:

A. 2.5%.
B. 4.2%.
C. 8.4%.

Answer: B

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 245-247
Study Session 15-61-f
Compute and interpret the duration and dollar duration of a bond.

The formula for calculating the duration of a bond (estimated percentage price change for a 100 basis point change in yield) is:

$$\frac{price\ if\ yields\ decline - price\ if\ yields\ increase}{2 \times initial\ price \times change\ in\ yield\ in\ decimal}$$

$$\frac{99.3 - 89.7}{2 \times 95.4 \times 0.012} = 4.19287 \approx 4.2\%$$

102. For an A- rated corporate bond that has deteriorating fundamentals, but is expected to remain investment grade, the greatest risk is *most likely*:

A. default risk
B. liquidity risk
C. credit spread risk

Answer: C

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 253-254
Study Session 15-61-j
describe the various forms of credit risk and describe the meaning and role of credit ratings.

Credit spread risk is correct since the bond is expected to see a widening of spreads as a result of deteriorating fundamentals and a potential downgrade but still remaining investment grade.

103. The difference between nominal spread and zero-volatility spread will *most likely* be greatest for a mortgage-backed security:

A. in an inverted yield curve environment.
B. in a steep upward-sloping yield curve environment.
C. with short maturity in a flat yield curve environment.

Answer: B

"Yield Measures, Spot Rates, and Forward Rates," Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 418
Study Session 16-65-f
Differentiate between the nominal spread, the zero-volatility spread, and the option-adjusted spread.

The difference between the Z-spread and the nominal spread is greater for issues in which the principal is repaid over time rather than only at maturity. In addition, the difference between the Z-spread and the nominal spread is greater in a steep yield curve environment.

104. A fixed income portfolio manager is evaluating investments in the mortgage market but is concerned about prepayment risk. The security that will *most likely* minimize prepayment risk is:

A. a mortgage passthrough security.
B. a portfolio of interest-only mortgage loans.
C. tranche B of a collateralized mortgage obligation.

Answer: C

“Overview of Bond Sectors and Instruments,” Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 281-288
Study Session 15-62-f
State the motivation for creating a collateralized mortgage obligation.

A collateralized mortgage obligation or CMO, is structured to distribute prepayment risk among different classes or tranches of bonds. Tranche A would be repaid first, followed by tranche B, then C, etc.

105. An analyst is evaluating various debt securities issued by a company. The type of security that is *most likely* to yield the lowest recovery in a bankruptcy is a:

A. mortgage bond
B. debenture bond.
C. collateral trust bond.

Answer: B

“Overview of Bond Sectors and Instruments,” Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 294-296
Study Session 15-62-h
Describe the characteristics and motivation for the various types of debt issued by corporations (including corporate bonds, medium-term notes, structured notes, commercial paper, negotiable CDs, and bankers acceptances).

A debenture bond is unsecured and would be expected to recover less should the company file for bankruptcy, while mortgage and collateral trust bonds are secured by real property.

106. A U.S. investor has purchased a tax-exempt 5-year municipal bond at a yield of 3.86 percent which is 100 basis points less than the yield on a 5-year option-free U.S. Treasury. If the investor's marginal tax rate is 32 percent, then the yield ratio are *closest* to:

A. 0.79
B. 1.26
C. 5.68

Answer: A

"Understanding Yield Spread," Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 335-336
Study Session 16-63-e, i
Compute, compare, and contrast the various yield spread measures.
Compute the after-tax yield of a taxable security and the tax-equivalent yield of a tax-exempt security.

Yield ratio = (yield on tax-exempt bond) / (yield of US Treasury) =
3.86 / (3.86 + 100bp) = 3.86 / 4.86 = 0.79

107. An analyst has gathered the following information provided in the table below:

Period	Years	U.S. Treasury Spot Rate (%)	Credit Spread (%)
1	1	3.00	0.20
2	2	3.50	0.30
3	3	4.00	0.40
4	4	4.50	0.50
5	5	5.00	0.60

Based on the information provided in the table, the current market price of a $1,000 par value, option-free, 0 percent coupon corporate bond maturing in 5 years is *closest* to:

A. $758.70.
B. $781.20.
C. $804.44.

Answer: A

"Introduction to the Valuation of Debt Securities," Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 366-371

Study Session 16-64-e
Compute the value of a zero-coupon bond.

The appropriate discount rate is 5.6% = 5% + 0.6%. The semiannual discount rate is 2.8%. The price of the bond using semiannual discounting is:

$$\frac{\$1000}{1.028^{10}} = \$758.70$$

108. An analyst gathered the following information about a portfolio comprised of three bonds:

Bond	Price ($)	Par Amount Owned	Duration
A	102.000	$7 million	1.89
B	94.356	$5 million	7.70
C	88.688	$3 million	11.55

Assuming there is no accrued interest, then the portfolio duration is *closest* to:

A. 5.55 years.
B. 5.76 years.
C. 6.82 years.

Answer: A

"Introduction to the Measurement of the Interest Rate Risk," Frank J. Fabozzi
2009 Modular Level I, Volume 5, pp. 468
Study Session 16-66-f
Compute the duration of a portfolio, given the duration of the bonds comprising the portfolio, and explain the limitations of portfolio duration.

Portfolio value = (1.02 × 7 mil) + (0.94356 × 5 mil) + (0.88688 × 3 mil) = 14,518,440
Weight, Bond A = 7,140,000 / 14,518,440 = 0.492
Weight, Bond B = 4,717,800 / 14,518,440 = 0.325
Weight, Bond C = 2,660,640 / 14,518,440 = 0.183
Portfolio duration = (0.492 × 1.89) + (0.325 × 7.70) + (0.183 × 11.55) = 5.55

Questions 109 through 114 relate to Alternative Investments.

109. Hedge funds that contain infrequently traded assets would most likely exhibit a downward bias with respect to:

A. measured risk but not correlations with conventional equity investments.
B. correlations with conventional equity investments but not measured risk.
C. both measured risk and correlations with conventional equity investments.

Answer: C

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2009 Modular Level I, Volume 6, pp. 214-215
Study Session 18-73-l
Discuss the performance of hedge funds, the biases present in hedge fund performance measurement, and explain the effect of survivorship bias on the reported return and risk measures for a hedge fund database.

The presence of infrequently traded assets leads to smoothed pricing that induces a significant downward bias to the measured risk of the assets as well as the correlations of returns with conventional equity and fixed income returns.

110. Venture capital investments used to provide capital for companies initiating commercial manufacturing and sales are *most likely* to be considered a form of:

A. seed-stage financing.
B. first-stage financing.
C. second-stage financing.

Answer: B

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2009 Modular Level I, Volume 6, p. 200
Study Session 18-73-g
Explain the stages of venture capital investing, venture capital investment characteristics and challenges to venture capital valuation and performance measurement.

Venture capital investments provided to initiate commercial manufacturing and sales is considered a form of first-stage financing.

111. Which classification of hedge funds is *least likely* to use a short position in stock as a part of its strategy?

A. Market-neutral funds.
B. Emerging-market funds.
C. Distressed securities funds.

Answer: B

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2009 Modular Level I, Volume 6, pp. 207-210
Study Session 18-73-i
Discuss the descriptive accuracy of the term "hedge fund," define hedge fund in terms of objectives, legal structure, and fee structure, and describe the various classifications of hedge funds.

Emerging-market funds invest in less liquid and less efficient assets of emerging markets that are difficult to short.

112. The infrequent trading of some assets that hedge funds invest in *most likely* results in hedge fund:

A. risk being understated.
B. returns being understated.
C. correlations with other assets being overstated.

Answer: A

"Alternative Investments", Bruno Solnik, and Denis McLeavy
2009 Modular Level I, Volume 6, pp. 214-215
Study Session 18-73-l
Discuss the performance of hedge funds, the biases present in hedge fund performance measurement, and explain the effect of survivorship bias on the reported return and risk measures for a hedge fund database.

The infrequent trading of some assets held by hedge funds results in risk measures calculated on the basis of estimated fair value of holdings rather than market prices. This results in reduced volatility or risk.

113. Which of the following is the *least accurate* approach used to value closely held companies? Basing the value of company on the:

A. present value of future economic income.
B. historic cost of the assets of similar companies.
C. average market price of similar companies recently sold.

Answer: B

"Alternative Investments", Bruno Solnik, and Denis McLeavy
2009 Modular Level I, Volume 6, pp. 218-219
Study Session 18-73-n
Describe alternative valuation methods for closely held companies and distinguish among the bases for the discounts and premiums for these companies.

This is not a method used to value closely held companies. The correct method is to base it on the replacement cost of the company's assets.

114. The primary motivation for investing in commodity-linked bonds is that they *most likely* provide:

A. an income stream.
B. capital gains returns.
C. protection against interest rate risk.

Answer: A

"Alternative Investments", Bruno Solnik, and Denis McLeavy
2009 Modular Level I, Volume 6, pp. 225-226
Study Session 18-73-q
Explain the motivation for investing in commodities, commodities derivatives, and commodity-linked securities.

The primary reason for investing in commodity-linked bonds is that they provide the investor with an income stream.

Questions 115 through 120 relate to Portfolio Management.

115. Which of the following constraints would *most likely* appear in the unique needs and preferences section of a trust's investment policy statement? The portfolio is:

  A. subject to the prudent-man standard.
  B. prohibited from investing in tobacco companies.
  C. prohibited from holding less than 5% in cash instruments.

  Answer: B

  "The Asset Allocation Decision," Frank K. Reilly and Keith C. Brown
  2009 Modular Level I, Volume 4, pp. 206-212
  Study Session 12-49-d
  Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique needs and preferences.

  Unique needs and preferences include the prohibition of certain investments. The investment constraints of liquidity, tax concerns, and legal and regulatory factors adequately address the portfolio's other constraints.

116. Over time, the major source of investment return and risk can *most likely* be attributed to:

  A. stock selection.
  B. asset allocation.
  C. risk management.

  Answer: B

  "The Asset Allocation Decision," Frank K. Reilly and Keith C. Brown
  2009 Modular Level I, Volume 4, pp. 214-216
  Study Session 12-49-e
  Describe the importance of asset allocation, in terms of the percentage of a portfolio's return that can be explained by the target asset allocation, and explain how political and economic factors result in differing asset allocations by investors in various countries.

  The asset allocation decision explains about 90% of a fund's returns over time. Across al funds, asset allocation explains an average of 40% of the variation in fund returns, and slightly more than 100% of the average fund's level of return.

117. The risk-free interest rate is 5 percent, and the return on market portfolio is 8 percent. A stock with a beta of 0.5 that has an estimated rate of return of 7 percent is *most likely*:

A. overvalued.
B. undervalued.
C. correctly valued.

Answer: B

"Managing Investment Portfolio: A Dynamic Process" John Maginn, Donald Tuttle, Denis McLeavy, Jerald Pinto
2009 Modular Level I, Volume 4, p 259-263
Study Session 12-51-e
Calculate, using the SML, the expected return on a security, and evaluate whether the security is overvalued, undervalued, or properly valued.

The required return = $E(R_i) = RFR + \beta_i (E(R_m) - RFR) = 5 + 0.5(8-5) = 6.5$. But the estimated return is 7%. Therefore the stock is undervalued because its estimated return, given the risk, lies above the SML, i.e. 7% > 6.5%.

118. The minimum variance zero-beta portfolio *most likely* has some:

A. systematic and unsystematic risk.
B. unsystematic risk and no systematic risk.
C. systematic risk and no unsystematic risk.

Answer: B

"Managing Investment Portfolio: A Dynamic Process" John Maginn, Donald Tuttle, Denis McLeavy, Jerald Pinto
2009 Modular Level I, Volume 4, pp. 268-269
Study Session 12-51-d
The candidate should be able to explain the capital asset pricing model, including the security market line (SML) and beta, and describe the effects of relaxing its underlying assumptions.

Specifically within the set of feasible alternative portfolios, several portfolios exist where the returns are completely uncorrelated with the market portfolio; the beta of these portfolios with the market portfolio is zero. From among the several zero-beta portfolios, you would select one with minimum variance. This portfolio does not have any systematic risk (beta = 0), but it does have some unsystematic risk.

119. Which of the following statements is *least likely* to be an assumption about investor behaviour underlying the Markowitz model?

A. Investors maximize one-period expected return
B. Investors base their decisions solely on expected return and risk
C. Investors have utility curves that are a function of expected returns and variance.

Answer: A

"Managing Investment Portfolio: A Dynamic Process" John Maginn, Donald Tuttle, Denis McLeavy, Jerald Pinto
2009 Modular Level I, Vol 4, p 225-226
Study Session 12-50 b;
The candidate should be able to list the assumptions about investor behaviour underlying the Markowitz model;

Investors <u>maximize one-period expected utility</u>, and their utility curves demonstrate diminishing marginal utility of wealth.

120. Compared to the traditional Capital Asset Pricing Model (CAPM), where lending and borrowing are carried out at the risk-free rate, a zero-beta CAPM would *most likely* result in a security market line (SML) with:

A. unchanged intercept and slope.
B. a higher intercept and flatter slope.
C. a lower intercept and steeper slope.

Answer: B

"Managing Investment Portfolio: A Dynamic Process" John Maginn, Donald Tuttle, Denis McLeavy, Jerald Pinto
2009 Modular Level I, Volume 4, pp. 268-269
Study Session 12-51-d
The candidate should be able to explain the capital asset pricing model, including the security market line (SML) and beta, and describe the effects of relaxing its underlying assumptions.

Compared to the traditional CAPM, where lending and borrowing takes place at the risk-free rate, a zero beta CAPM will result in a SML that has a higher intercept and a flatter slope.