2010 Level I Mock Exam: Afternoon Session
ANSWERS AND REFERENCES

Questions 1 through 18 relate to Ethical and Professional Standards.

1. Alexander Newton, CFA, is the chief compliance officer for Mills Investment Limited. Newton institutes a new policy requiring the pro rata distribution of new security issues to all established discretionary accounts for which the new issues are appropriate. The policy also provides for the distribution of new issues to newly established discretionary accounts where appropriate after their one-month anniversary date. This policy is disclosed to all existing and potential clients. Did Newton violate any CFA Institute Standards of Professional Conduct?

   A. No.
   B. Yes, because the distribution policy should treat all discretionary accounts equally.
   C. Yes, because disclosure of inequitable allocation methods does not fulfill the duty for fair and equitable trade allocation procedures.

   Answer: C

   "Guidance for Standards I-VII", CFA Institute
   2010 Modular Level I, Vol. 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.

   Standard III (B) Fair Dealing requires when making investments in new offerings, advance indications of interest should be obtained as well as, providing for a method for calculating allocations. Additionally, disclosure of inequitable allocation methods does not relieve a member from this obligation.

2. When Jefferson Piedmont, CFA, joined Branch Investing, Branch began using a quantitative stock selection model Piedmont had developed on his own personal time prior to his employment with Branch. One year later when Piedmont left the firm, he found the original copy of the model he had developed in a file at his home and presented it to his new employer, who immediately began using the model. According to the *Standards of Practice Handbook*, did Piedmont violate any CFA Institute Standards of Professional Conduct?

   A. No.
   B. Yes, because he misappropriated property now belonging to Branch.
   C. Yes, because he failed to inform his new employer the model was the same one used by his previous employer.

   Answer: A

   "Guidance for Standards I-VII", CFA Institute
   2010 Modular Level I, Vol. 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.

   Although departing employees may not take employer property when departing (Standard IV (A) – Duties to Employers (Loyalty), the model Piedmont presented to his new employer was not Branch's property. It was created by Piedmont prior to his employment with Branch. The model was not created for Branch in the course of his employment, but was adopted by Branch.

3. Lawrence Hall, CFA, and Nancy Bishop, CFA, began a joint research report on Stamper Corporation. Bishop visited Stamper's corporate headquarters for several days and met with all company officers. Prior to the completion of the report, Bishop was reassigned to another project. Hall utilized his and Bishop's research to write the report but did not include Bishop's name on the report, because she did not agree with Hall's conclusion included in the final report. According to the CFA Institute *Standards of Practice Handbook*, did Hall violate any CFA Institute Standards of Professional Conduct?

   A. No.
   B. Yes, with respect to misrepresentation.
   C. Yes, with respect to diligence and reasonable basis.

   Answer: A

   "Guidance for Standards I-VII", CFA Institute

2010 Modular Level I, Vol. 1, pp. 29-31, 80-82
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 are in compliance with CFA Institute's Standard V (A) Diligence and Reasonable Basis, if they rely on the research of another party who exercised diligence and thoroughness. Because Bishop's opinion did not agree with the final report, disassociating her from the report is one way to handle this difference between the analysts.

4. According to the Global Investment Performance Standards (GIPS), which of the following is **not** a part of the verification process? Testing whether the:

A. firm has complied with all the composite construction requirements.
B. verification is undertaken by the compliance department in the absence of a third party.
C. firm's processes and procedures are designed to calculate results in compliance with GIPS standards.

Answer: B

Introduction to the Global Investment Performance Standards (GIPS®) CFA Institute, 2006
2010 Modular Level I, Vol. 1, p. 131
Study Sessions 1-3-c
Explain the requirements for verification of compliance with GIPS standards.

Verification tests (Standard V) whether the investment firm has complied with all the composite construction requirements of GIPS on a firm-wide basis, and whether the firm's processes and procedures are designed to calculate and present performance results in compliance with the GIPS Standards. Verification must be performed by an independent third party. A firm cannot perform its own verification.

5. Umi Grabbo, CFA, is a highly regarded portfolio manager for Atlantic Advisors (AA), a mid-sized mutual fund firm investing in domestic securities. She has watched the hedge fund boom and on numerous occasions suggested her firm create such a fund. Senior management has refused to commit resources to the area. Attracted by potential higher fees associated with hedge funds, Grabbo and several other employees organize a hedge fund to invest in international securities. Grabbo is careful to work on the fund development only on her own time. Because AA management thinks hedge funds are a fad, she does not inform her supervisor about the hedge fund creation. According to the *Standards of Practice Handbook*, Grabbo should *most likely* address which of the Standards immediately?

   A. Disclosure of Conflicts.
   B. Priority of Transactions.
   C. Additional Compensation Arrangements.

   Answer: A

   "Guidance for Standards I-VII", CFA Institute
   2010 Modular Level I, Vol. 1, pp. 75, 89-92, 94-98
   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 VI (A) Disclosure of Conflicts, Grabbo should disclose to her employer the fact she is developing a hedge fund that could possibly interfere with her responsibilities at AA. In setting up a new fund, Grabbo was not acting for the benefit of her employer. She should have informed AA that she wanted to organize a hedge fund and come to some mutual agreement on how this would occur.

6. David Donnigan enrolled to take the Level II CFA examination in the current year, however he did not take the exam. Donnigan advised his employer he passed Level II. Subsequently, he registered to take the Level II exam the next year. Which CFA Institute Standard of Professional Conduct did Donnigan *least likely* violate?

   A. Duty to employer.
   B. Professional misconduct.
   C. Referencing Candidacy in the CFA Program.

   Answer: A

"Guidance for Standards I-VII", CFA Institute
2010 Modular Level I, Vol. 1, pp. 35, 69-71, 105
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 should not engage in conduct involving dishonesty, fraud, deceit, or misrepresentation (Standard I (D)). The candidate's dishonesty is not addressed in the Standard relating to Duty to Employer, however. As he registered to take the exam in the next year he still qualifies to state he is a candidate (Standard VII (B)) but he lied to his employer about passing the examination, which is a professional misconduct violation.

7. Jeffrey Jones passed the Level I CFA examination in 1997 and the Level II examination in 2009. He is not currently enrolled for the Level III examination. According to the CFA Institute Standards of Professional Conduct, which of the following is the *most* appropriate way for Jones to refer to his participation in the CFA Program?

   A. Jeffrey Jones, CFA (expected 2011).
   B. Candidate in the CFA Institute CFA Program.
   C. Passed Level II of the CFA examination in 2009.

   Answer: C

   "Guidance for Standards I-VII", CFA Institute
   2010 Modular Level I, Vol. 1, pp. 105-108
   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.

   No designation exists for someone who has passed Level I, Level II, or Level III of the CFA exam (Standard VII (B)). Persons who have passed a certain level of the exam may state that they have completed that level. A person can only state he is a Candidate if he is currently enrolled in the CFA Program. It is also an improper reference to use "expected" a part of the designation.

8. Rebecca Wong is enrolled to take the Level I CFA examination. Her friend William Leung had purchased Level I study materials from a well-known CFA review program the previous year. Leung made a photocopy of the previous year's copyrighted materials and sold it to Wong to help her study. Who violated the CFA Institute Code of Ethics or any Standards of Professional Conduct?

   A. Both violated.
   B. Neither violated.
   C. Only Leung violated.

   Answer: A

   "Guidance for Standards I-VII", CFA Institute
   2010 Modular Level I, Vol. 1, pp. 15-18
   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.

   Photocopying copyrighted material, regardless of the year of publication, is a violation of the CFA Institute Standards (Standard I (A)) as copyrighted materials are protected by law. Candidates and members must comply with all applicable laws, rules, and regulations and must not knowingly participate or assist in a violation of laws.

9. Nicholas Bennett, CFA, is a trader at a stock exchange. Another trader approached Bennett on the floor of the exchange and verbally harassed him about a poorly executed trade. Bennett in response pushed the trader and knocked him to the ground. The exchange, after investigation, cleared Bennett from any wrongdoing. Which of the following *best* describes Bennett's conduct in relation to the CFA Institute Code of Ethics or Standards of Professional Conduct? Bennett:

   A. did not violate any Code or Standard.
   B. violated the Professional Misconduct Standard.
   C. violated both Misconduct and Integrity of Capital Markets Standards.

   Answer: B

   "Guidance for Standards I-VII", CFA Institute
   2010 Modular Level I, Vol. 1, pp. 11, 35
   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 CFA Institute Code of Ethics requires members to act with integrity, competence, diligence, respect and in an ethical and professional manner; while the Standards of Professional Conduct relating to Professional Misconduct state members and candidates must not commit any act reflecting adversely on their professional reputation, integrity, or competence. Bennett's actions violated the Code of Ethics and the Standard relating to Professionalism but not the Standard relating to Integrity of Capital Markets.

10. Albert Nyakenda, CFA, was driving to a client's office where he was expected to close a multi-million dollar deal, when he was pulled over by a traffic policeman When Nyakenda, realized the policeman planned to wrongly ticket him for speeding, he offered to buy him "lunch" so that he could quickly get to his client's office. The alternative was to go to the police station and file a complaint of being wrongly accused that would also involve going to court the next day to present his case. The lunch would cost significantly more than the ticket. Did Nyakenda violate the CFA Code of Ethics?

    A. Yes.
    B. No, because he was wrongly accused.
    C. No, because the cost of lunch is more than the ticket.

    Answer: A

    "Guidance for Standards I-VII", CFA Institute
    2010 Modular Level I, Vol. 1, p. 11
    Study Session 1–2–a, b
    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.
    Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

    Nyakenda was effectively trying to bribe the policeman so that he would not issue a speeding ticket. This action violates the Code of Ethics. Despite feeling he was wrongly accused, it is only his opinion, and may not based on fact or in a court of law. Nyakenda has a responsibility to act with integrity and in an ethical manual.

11. Delaney O'Keefe, a CFA candidate, is a portfolio manager at Bahati Management Company. The company is considering investing offshore for the first time, particularly in North America, on behalf of their clientele, whom are all high net worth individuals. O'Keefe does not have experience in offshore investments so she hires Mark Carlson, CFA of Carlson Consulting on the basis of his CFA Charter, to undertake due diligence exercises on the top ten portfolio managers in North America, ranked by Assets under Management (AUM). To avoid violating any Code and Standards, O'Keefe should *most likely* undertake:

    A. a sampling of the suitability of North America for clients.
    B. a due diligence exercise on Mark Carlson and Carlson Consulting.
    C. the due diligence exercise on the top ten asset managers herself.

    Answer: B

    "Guidance for Standards I-VII", CFA Institute
    2010 Modular Level I, Vol. 1, pp. 80 - 81
    Study Session 1–2–a, c
    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.
    Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

    O'Keefe can delegate a due diligence exercise to a third party but must ensure the person or company hired to do so is competent with the skills necessary to undertake a thorough and appropriate analysis. Just because a person has a CFA Charter does not necessarily mean he is appropriate for the assignment.

12. Reiko Kimisaki, CFA, is an investment advisor for a national social security fund in a frontier market with a very limited and illiquid capital market and a very young labor force with an investment time horizon of 25 – 30 years. She has been asked to suggest ways to increase the investment return of the overall portfolio. After careful assessment of the Fund's previous investment history, and available asset classes, she considers investment in private equity. What is Kimisaki's *lowest* priority to avoid any Code of Ethics and Standards of Professional Conduct violations prior to making this investment recommendation?

    A. Assess the risk tolerance of the Fund.
    B. Analyze the expected returns of private equity in the market.
    C. Determine if the Investment Policy Statement allows for alternative investments.

    Answer: B

"Guidance for Standards I-VII", CFA Institute
2010 Modular Level I, Vol. 1, pp. 60 - 62
Study Session 1–2–c
Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Prior to undertaking analysis with regard to expected returns, an advisor must determine suitability of an investment class including whether it fits within the client's risk tolerance and if it is an allowable asset class as per the client's Investment Policy Statement. Only once these factors have been determined should she proceed if appropriate to analyze expected returns to determine a particular investment recommendation.

13. While waiting in the business class lounge before boarding an airplane, Becca Msafari, CFA, an equity analyst, overhears a conversation by a group of senior managers, including members of the Board, from a large publicly listed bank. The managers discuss staff changes necessary to accommodate their regional expansion plans. Msafari heard several staff names mentioned. Under what circumstances could Msafari *most likely* use this information when making an investment recommendation to her clients?

    A. Under no circumstances.
    B. If she does not breach the confidentiality of names of staff.
    C. If the discussed changes are unlikely to affect the public perception of the bank.

    Answer: C

    "Guidance for Standards I-VII", CFA Institute
    2010 Modular Level I, Vol. 1, pp. 36 - 39
    Study Session 1–2–a, b
    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.
    Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

    In order to comply with the Code and Standards, a member or candidate cannot use material non-public information when making investment recommendations. The information overheard would not be considered material only if the staff likely to be terminated were not considered to be in influential positions such that any public announcement of their removal would be unlikely to move the share price of the bank, nor would the regional expansion substantially impact the value of the bank.

14. Norman Bosno,,CFA acts as an outside portfolio manager to a Sovereign Wealth Fund. Raphel Palmeti, a Fund Official, approaches Bosno to interest him in investing in Starlite Construction Company. He tells Bosno if he approves a two million dollars investment in Starlite by the Fund Bosno will receive a "bonus" that will make him wealthy. Palmeti also adds if Bosnoviak decides not to invest, he will lose the Fund account. After doing a quick and simple analysis, Bosno determines the investment is too risky for the Fund. If Bosno agrees to make the investment what Standard is *least* likely to be violated?

    A. Loyalty, Prudence and Care
    B. Diligence and Reasonable Basis.
    C. Additional Compensation Arrangements.

    Answer: B

    "Guidance for Standards I-VII", CFA Institute
    2010 Modular Level I, Vol. 1, pp. 48 – 50, 75, 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.

    Despite Bosno undertaking a quick and simple analysis to determine the investment would be too risky for the Sovereign Wealth Fund doesn't necessarily mean he was not diligent and did not have a reasonable basis for making that determination.

15. Francesca Ndenda, CFA and Grace Rutabingwa work for New Age Managers where Rutabingwa reports to Ndenda on a daily basis, working in the same department. It has come to the attention of Ndenda that Rutabingwa received a Notice of Enquiry from the Professional Conduct Program at the CFA Institute regarding a potential cheating violation when he sat for the CFA exam in June. As Rutabingwa's supervisor, Ndenda is afraid the behavior of Rutabingwa will be seen as a violation of the CFA Code and Standards. Does Ndenda have cause for concern?

    A. Yes.
    B. No, because her responsibilities do not apply.
    C. No, not until Rutabingwa is found guilty of cheating.

    Answer: B

"Guidance for Standards I-VII", CFA Institute
2010 Modular Level I, Vol. 1, pp. 76 - 77
Study Session 1–2–a, b
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.
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

A supervisor's responsibilities relate to detecting and preventing violations by anyone subject to their supervision or authority regarding activities they supervise. Ndenda had no way of detecting and/or preventing Rutabingwa from cheating during the CFA exam, an event she did not attend.

16. Jean-Luc Schlumberger, CFA, is an independent research analyst providing equity research on companies listed on exchanges in emerging markets. He often incorporates statistical data he obtained from the web sites of the World Bank and the Central Banks of the various countries into the body of his research reports. While not indicated within the reports, whenever his clients ask where he gets his information he informs them the information is in the public domain, so he doesn't keep his own records. When the clients ask for the specific web site addresses he provides the information. Which Standard has Schlumberger *most likely* violated?

    A. Misconduct.
    B. Record Retention.
    C. Misrepresentation.

    Answer: C

    "Guidance for Standards I-VII", CFA Institute
    2010 Modular Level I, Vol. 1, p. 30
    Study Session 1–2–a, b
    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.
    Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

    Schlumberger has plagiarized the information he obtained from the websites of the World Bank and the various Central Banks by not quoting the sources within the research reports. This is a violation of Standard I - Professionalism (C) Misrepresentation.

17. Oni Erobo, CFA, is the General Partner in a real estate development project and is responsible for completing the project within an 18-month period and within budget. Erobo is expected to receive equity of 20% if the project comes within budget. Concerned that project costs would escalate, the Limited Partners require Erobo to cap expenses at 15% above budget. Costs were within expectation up until the last month of construction when costs of imported lighting fixtures (accounting for roughly 5% of total costs) escalated by more than 50%. As a result, the overall return declined below the partners expected 35% ROI. Erobo did not inform the Limited Partners about the increased costs. Did Erobo violate the CFA Code of Ethics and Standards of Professional Conduct?

    A. No.
    B. Yes, because returns are lower than expected by the Partners.
    C. Yes, because he did not disclose the increased costs to his Partners.

    Answer: A

    "Guidance for Standards I-VII", CFA Institute
    2010 Modular Level I, Vol. 1, pp. 35-36
    Study Session 1–2–a, b
    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.
    Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

    No violation took place. Erobo was not required to inform the Limited Partners regarding the increase in lighting fixtures as the increase in cost would not cause the overall project cost to escalate higher than the 15% budget variance contingency agreed within the partnership.

18. A Central Bank fines a commercial bank for not following statutory regulations with regard to making specific non-performing loan provisions on three loans. Louis Marie Buffet, CFA, sits on the Board of Directors of the Commercial Bank as a non-executive director, representing minority shareholders. He also chairs the internal audit committee of the bank that determines the provisioning policy of the bank. Mercy Gatabaki, CFA is the bank's external auditor and follows international auditing standards whereby she tests the loan portfolio by randomly selecting loans to check for compliance in all aspects of Central Bank regulations. Which Charterholder is *most likely* in violation of the Code and Standard?

    A. Both.
    B. Buffet.
    C. Gatabaki.

Answer: B

“Guidance for Standards I-VII”, CFA Institute
2010 Modular Level I, Vol. 1, pp. 15 - 17
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.

Buffet sat on the audit committee that determined the bank’s provisioning provisions that were contrary to the statutory regulations of the Central Bank. As a result he most likely violated Standard I – Professionalism by not abiding by regulations of a regulatory body. Gatabaki did not violate Standard I - Professionalism as it is not apparent she knowingly facilitated the incorrect provisioning policy or even followed it. Auditors in the course of their audit sample files. As a result, it is possible Gatabaki did not even come across the files which were treated in a manner by the bank that was contrary to the Central Bank regulations.

Questions 19 through 32 relate to Quantitative Methods

19. An increase in which of the following items is *most likely* to result in a wider confidence interval for the population mean?

    A. Sample size
    B. Reliability factor
    C. Degrees of freedom

    Answer: B

    "Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
    2010 Modular Level I, Vol. 1, pp. 487-493
    Study Session 3-10-j
    Calculate and interpret a confidence interval for a population mean, given a normal distribution with 1) a known population variance, 2) an unknown population variance, or 3) an unknown variance and a large sample size.

    An increase in the reliability factor (the degree of confidence) increases the width of the confidence interval. Increasing the sample size and increasing the degrees of freedom both shrink the confidence interval.

20. The joint probability of returns, for securities A and B, are as follows:

Joint Probability Function of Security A and Security B Returns (Entries are joint probabilities)		
	Return on security B=30%	*Return on security B=20%*
Return on security A= 25%	0.60	0
Return on security A= 20%	0	0.40

The covariance of the returns between securities A and B is *closest* to:

A. 3.
B. 12.
C. 24.

Answer: B

"Probability Concepts," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA

2010 Modular Level I, Vol. 1, pp. 391-392
Study Session 2-8-m
Calculate and interpret covariance given a joint probability function.

Expected return on security A = 0.6 × 25% + 0.4 × 20% = 15% + 8% = 23%
Expected return on security B = 0.6 × 30% + 0.4 × 20% = 18% + 8% = 26%
Cov (R_A,R_B) = 0.6 [(25 − 23)(30 −26)] +0.4 [(20 − 23)(20 − 26)]
= 0.6(2 × 4) + 0.4(−3 × −6) = 0.6(8) +0.4(18) = 4.8 + 7.2 = 12.

21. An analyst determines that approximately 99 percent of the observations of daily sales for a company are within the interval from $230,000 to $480,000 and that daily sales for the company are normally distributed. The standard deviation of daily sales (in $) for the company is *closest* to:

A. 41,667.
B. 62,500.
C. 83,333.

Answer: A

"Common Probability Distributions," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, page 441
Study Session 3-9-j
Determine the probability that a normally distributed random variable lies inside a given confidence interval.

Given that sales are normally distributed, the mean is centered in the interval. Mean = ($230,000 + 480,000) / 2 = $355,000. 99 percent of observations under a normal distribution will be plus/minus three standard deviations. Thus, ($355,000 - $230,000)/3.0 = $41,667. It is also the case that ($480,000 - $355,000)/3.0 = $41,667.

22. The *least* accurate statement about measures of dispersion for a distribution is that the:

A. range provides no information about the shape of the data distribution.
B. arithmetic average of the deviations around the mean will always be equal to one.
C. mean absolute deviation will always be less than or equal to the standard deviation.

Answer: B

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 307-308
Study Session 2-7-g
Define, calculate, and interpret 1) a range and mean absolute deviation, and 2) the variance and standard deviation of a population and of a sample.

The arithmetic sum of the deviations around the mean will always equal zero, not one.

23. An analyst gathers the following information ($ millions) about the performance of a portfolio:

Quarter	*Value at Beginning of Quarter (prior to inflow or outflow)*	*Cash Inflow (Outflow) At Beginning of Quarter*	*Value at End of Quarter*
1	2.0	0.2	2.4
2	2.4	0.4	2.6
3	2.6	(0.2)	3.2
4	3.2	1.0	4.1

The portfolio's annual time-weighted rate of return (%) is *closest* to:

A. 8.
B. 27.
C. 32.

Answer: C

"Discounted Cash Flow Applications," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 247-253
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 time-weighted rate of return is calculated by computing the quarterly holding period returns and linking those returns into an annual return. In this case, the quarterly holding periods are 2.4/2.2 = 1.0909, 2.6/2.8 = 0.9286, 3.2/2.4 = 1.3333, and 4.1/4.2 = 0.9762. The time-weighted return is thus (1.0909 × 0.9286 × 1.3333 × 0.9762) - 1 = 1.3185 – 1 = 0.3185 or 31.85%.

24. A mutual fund manager wants to create a fund based on a high-grade corporate bond index. She first distinguishes between utility bonds and industrial bonds; she then, for each segment, defines maturity intervals of less than 5 years, 5 to 10 years, and greater than 10 years. For each segment and maturity level, she classifies the bonds as callable or non-callable. She then selects bonds from each of the subpopulations she has created. For the manager's sample, which of the following *best* describes the sampling approach?

A. Systematic
B. Simple random
C. Stratified random

Answer: C

"Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 476-479
Study Session 3-10-b
Distinguish between simple random and stratified random sampling.

In stratified random sampling, one divides the sample into sub-populations and randomly samples from within the subpopulations.

25. An analyst conducts a significance test to determine if the relation between two variables is real or the result of chance. His null hypothesis is that the population correlation coefficient is equal to zero and his alternative hypothesis is that the population correlation coefficient is different from zero. He gathers the following information:

Value of the test statistic	2.8092
Critical value at the 0.05 significance level	1.96
Critical value at the 0.01 significance level	2.58

The analyst *most likely* conducted a:

A. one-tailed test and can reject his null hypothesis.
B. two-tailed test and can reject his null hypothesis.
C. two-tailed test and cannot reject his null hypothesis.

Answer: B

"Hypothesis Testing," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 517-524

Study Session 3-11-a, c
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.
Define and interpret a decision rule and the power of a test, and explain the relation between confidence intervals and hypothesis tests.

Because the alternative hypothesis is that the correlation is different from zero (either above or below zero), the analyst conducted a two-tailed test. Because the test statistic is greater than either of the critical values, the analyst can reject the null hypothesis.

26. The null hypothesis is *most* appropriately rejected when the *p*-value is:

    A. negative.
    B. close to one.
    C. close to zero.

    Answer: C

    "Hypothesis Testing," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
    2010 Modular Level I, Vol. 1, pp. 525-526
    Study Session 3-11-e
    Explain and interpret the p-value as it relates to hypothesis testing.

    The *p*-value is the smallest level of significance at which the null hypothesis can be rejected. The smaller the *p*-value, the more strong the evidence against accepting the null as true, *P*-values close to zero strongly suggest the null hypothesis should be rejected.

27. Under which measurement scale is data *most likely* categorized without being ranked?

    A. Ordinal
    B. Nominal
    C. Interval

    Answer: B

    "Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
    2010 Modular Level I, Vol. 1, p. 270
    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.

Data is categorized, but not ranked under a nominal scale. Under an ordinal scale data is ranked, while under an interval scale, data is ranked and separated by equal intervals.

28. On 7 January 2008, an investor purchases 100 shares of stock for $32.50 a share. On 7 January 2009, the investor purchases 100 more shares of the same stock for $36.70 a share. On 7 January 2010, the investor sells all 200 shares of the stock for $42.00 a share. The internal rate of return for this investment is *best* described as an example of a:

A. geometric mean return.
B. time-weighted rate of return.
C. money-weighted rate of return.

Answer: C

"Discounted Cash Flow Applications," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 246-247
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 return is the internal rate of return for the portfolio.

29. A 180-day U.S. Treasury bill has a holding period yield (HPY) of 2.375%. The bank discount yield (in %) is *closest* to :

A. 4.640.
B. 4.750.
C. 4.875.

Answer: A

"Discounted Cash Flow Applications," Richard A. Defusco CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 253-257
Study Session 2-6-d, e
Calculate and interpret the bank discount yield, holding period yield, effective annual yield, and money market yield for a U.S. treasury bill

Convert among holding period yields, money market yields, effective annual yields, and bond equivalent yields.

First, use the HPY to find money market yield: r_{MM} = (HPY) ×(360/t) = .02375 × (360 / 180) = 0.0475. Then use the money market yield to find the bond discount yield: r_{MM} = (360 r_{BD}) / ((360 – (t)(r_{BD})). In this case: 0.0475 = (360 r_{BD}) / ((360 – (180)(r_{BD})). Now solve for r_{BD}.
0.0475 × ((360 – (180)(r_{BD}) = (360 r_{BD}).
17.10 = (360 r_{BD}) + 8.55 r_{BD}.
r_{BD} = 17.10 / 368.55 = 0.046398.

30. The sample variance based on the following data points: -6.0 percent, 5.8 percent, 8.4 percent, and 9.7 percent is *closest* to:

A. 0.000360.
B. 0.003855.
C. 0.005140.

Answer: C

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 312-313
Study Session 2-7-g
Define, calculate, and interpret 1) a range and mean absolute deviation, and 2) the variance and standard deviation of a population and of a sample.

The sample mean is calculated as (-6.0% + 5.8% + 8.4% + 9.7%)/4 = 4.48% and the sample variance is ([-6.0% - 4.48%]^2 + [5.8% - 4.48%]^2 + [8.4% - 4.48%]^2 + [9.7% - 4.48%]^2) / (4-1) = 0.005140.

31. An analyst determines that 60 percent of all U.S. pension funds hold hedge funds. In evaluating this probability, a random sample of 10 U.S. pension funds is taken. Using the binomial probability function, $P(X = x) = \frac{n!}{(n-x)!x!}\, p^x(1-p)^{n-x}$, the probability (in %) that exactly 6 of the 10 firms in the sample hold hedge funds is *closest to*:

A. 25.08.
B. 27.99.
C. 60.00.

Answer: A

“Common Probability Distributions,” Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, p. 428
Study Session 3-9-f
Calculate and interpret probabilities given the discrete uniform and the binomial distribution functions.

The number of trials is 10, the number of success is 6, and the probability of success is 0.60.
$P(X=6)=\frac{10!}{(10-6)!6!}\,0.6^6(1-0.6)^{10-6}$ = 0.250823.

32. An energy analyst forecasts that the price per barrel of crude oil five years from now will range between USD$175 and USD$205. Assume oil prices are a continuous uniform distribution. Recall that the cumulative distribution function for a continuous uniform variable is:

$$\mathrm{F}(x)=\begin{cases} 0 & for\ x \le a \\ \frac{x-a}{b-a} & for\ a<x<b \\ 1 & for\ x \ge b \end{cases}$$

The probability (in %) that the price will be less than USD$180 five years from now is *closest to*:

A. 5.6.
B. 16.7.
C. 44.4.

Answer: B

“Common Probability Distributions,” Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 435-439
Study Session 3-9-h
Describe the continuous uniform distribution, and calculate and interpret probabilities, given a continuous uniform probability distribution.

The probability that the price per barrel of crude oil five years from now will be less than USD$80 ($F$(80)):
$F(80)=\frac{(180-175)}{(205-175)}=\frac{5}{30}=\frac{1}{6}=0.166667$, or 16.7%.

Questions 33 through 44 relate to Economics

33. For a firm in perfect competition, as the quantity of labor increases, the marginal revenue product *most likely* diminishes because of a decline in:

    A. marginal product only.
    B. marginal revenue only.
    C. both marginal product and marginal revenue.

    Answer: A

    "Markets for Factors of Production," Michael Parkin
    2010 Modular Level I, Vol. 2, p. 268
    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.

    For a firm in perfect competition, as quantity of labor increases, marginal revenue product diminishes because marginal product diminishes.

34. If a price cut of a product increases total revenue, demand is *best* described as:

    A. elastic.
    B. inelastic.
    C. unit elastic.

    Answer: A

    "Elasticity," Michael Parkin
    2010 Modular Level I, Vol. 2, p.14
    Study Session 4-13-b
    Calculate elasticities on a straight-line demand curve, differentiate among elastic, inelastic, and unit elastic demand, and describe the relation between price elasticity of demand and total revenue.

    A product's demand is elastic if demand increases by a greater percentage than the percentage price cut when prices are cut. For example, if a 1 percent price cut increases the quantity sold by more than 1 percent, total revenue increases and demand is said to be elastic.

35. Which of the following types of unemployment is *most likely* to be associated with an economy in which many workers have been made obsolete by changing technology?

    A. Cyclical
    B. Frictional
    C. Structural

    Answer: C

    "Monitoring Jobs and the Price Level," Michael Parkin
    2010 Modular Level I, Vol. 2, p. 313
    Study Session 5-22-c
    Explain the types of unemployment, full employment, the natural rate of unemployment, and the relation between unemployment and real GDP.

    Structural unemployment arises when changes in technology or international competition change the skills needed to perform jobs or change the locations of jobs.

36. The free-rider problem, an obstacle to efficiency, is *most likely* associated with:

    A. monopolies.
    B. public goods.
    C. subsidies and quotas.

    Answer: B

    "Efficiency and Equity," Michael Parkin
    2010 Modular Level I, Vol. 2, p. 50
    Study Session 4-14-e
    Explain 1) how efficient markets ensure optimal resource utilization and 2) the obstacles to efficiency and the resulting underproduction or overproduction, including the concept of deadweight loss.

    Public goods can be consumed simultaneously by everyone and it is in each person's interest to free ride on everyone else and avoid paying for her or his share of a public good.

37. An expansionary fiscal policy is *least likely* to include an increase in:

    A. tax rates.
    B. government borrowing.
    C. government expenditures.

    Answer: A

"Fiscal Policy," Michael Parkin
2010 Modular Level I, Vol. 2, pp. 448-450
Study Session 6-26-d
Discuss the use of fiscal policy to stabilize the economy, including the effects of the government expenditure multiplier, the tax multiplier, and the balanced budget multiplier.

An expansionary fiscal policy means that government increases its purchases of goods and services and/or cuts tax rates to increase aggregate demand. As a consequence, government borrowing is likely to increase.

38. For markets with perfectly elastic supply, the introduction of a tax will *most likely* result in:

A. a price increase and the seller pays the entire tax.
B. a price increase and the buyer pays the entire tax.
C. no change in price and the seller pays the entire tax.

Answer: B

"Markets in Action," Michael Parkin
2010 Modular Level I, Vol. 2, pp. 82-83
Study Session 4-15-c
Explain the impact of taxes on supply, demand, and market equilibrium, and describe tax incidence and its relation to demand and supply elasticity.

When supply is perfectly elastic (horizontal supply curve) the price increases by the amount of tax and the seller passes on the entire tax burden to the buyer.

39. A company determines that the quantity demanded of a product increases by 5% when price is reduced by 10%. The product's price elasticity of demand is *best* described as:

A. elastic.
B. inelastic.
C. perfectly elastic.

Answer: B

"Elasticity," Michael Parkin
2010 Modular Level I, Vol. 2, pp. 12-16
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.

When the price elasticity of demand is between 0 and 1, the good is said to have an inelastic demand. In this case, the price elasticity of demand is calculated as 5% / 10% = 0.5.

40. In perfectly competitive industries what is the *most likely* final long-run effect of a permanent decrease in demand?

    A. Price decreases.
    B. Economic profit decreases.
    C. The number of firms decreases.

    Answer: C

    "Perfect Competition", Michael Parkin
    2010 Modular Level I, Vol.2, pp. 175-176
    Study Session 5-18-d
    Discuss how a permanent change in demand or changes in technology affect price, output and economic profit.

    A permanent decrease in demand in a perfectly competitive industry will, in the short-run, cause the demand curve to shift to the left causing prices to fall and creating losses for producers. As the fall in demand is permanent, eventually firms will leave the industry due to these economic losses. As firms leave the industry the supply curve moves to the right thus increasing prices back to an equilibrium where economic profit is zero.

41. If a regulatory agency sets prices equal to a monopoly's long-run average cost (LRAC), the monopoly will *most likely* have economic profit that is:

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

    Answer: A

    "Monopoly," Michael Parkin
    2010 Modular Level I, Vol. 2, pp. 210-212
    Study Session 5-19-e
    Explain the potential gains from monopoly and the regulation of a natural monopoly.

    If regulators set the price to equal long-run average cost, the monopolist will earn zero economic profits (Figure 11, p. 210).

42. When rent controls limit rents to prices below equilibrium prices, which of the following is *most likely* to occur?

A. New housing construction expands.
B. Long-time tenants extract significant benefit from landlords.
C. Newcomers are given preferential entry into rent-controlled apartments.

Answer: B

"Markets in Action" Michael Parkin
2010 Modular Level I, Vol. 2, p. 71-72
Study Session 4-15-a
Explain market equilibrium, distinguish between long-term and short-term effects of outside shocks, and describe the effects of rent ceilings on the existence of black markets in the housing sector and on the market's efficiency.

Rent ceilings reduce construction and create a housing shortage. They lower rents for some but raise them for others. Long-time renters are winners but mobile newcomers are losers.

43. Consider the following information regarding consumer price index (CPI) numbers for this year and last year.

CPI this year	267.54
CPI last year	261.25

The inflation rate (in %) for the period is *closest* to:

A. 2.35.
B. 2.38.
C. 2.41.

Answer: C

"Monitoring Jobs and the Price Level" Michael Parkin
2010 Modular Level I, Vol. 2, pp. 319-320
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 source of CPI bias.

The inflation rate is calculated as: ((CPI this year – CPI last year) / CPI last year) × 100.
In this question, the inflation rate is ((267.54 – 261.25) / 261.25) × 100 = 2.407656.

44. The quantity theory of money is *best* described as the proposition that, in the long run, an increase in the quantity of money brings a percentage increase in the price level that is:

A. equal.
B. lower.
C. higher.

Answer: A

"Money, the Price Level, and Inflation" Michael Parkin
2010 Modular Level I, Vol. 2, p. 385-387
Study Session 6-24-i
Discuss the quantity theory of money and its relation to aggregate supply and aggregate demand.

The quantity theory of money is the proposition that in the long run, an increase in the quantity of money brings an equal percentage increase in the price level.

Questions 45 through 68 relate to Financial Statement Analysis

45. According to the International Financial Reporting Standards framework, which of the following qualities of financial information is *least likely* to improve its reliability?

    A. Neutrality
    B. Consistency
    C. Substance over form

    Answer: B

    "Financial Reporting Standards", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA

    2010 Modular Level I, Vol. 3, pp. 107-108
    Study Session 7-31-d
    Describe the International Financial Reporting Standards (IFRS) framework, including the qualitative characteristics of financial statements, the required reporting elements, and the constraints and assumptions in preparing financial statements.

    The IFRS framework identifies five factors that contribute to reliability: faithful representation, substance over form, neutrality, prudence and completeness. Consistency is not one of them.

46. The following information is available about a company ($ millions):

Year ended 31 December	**2009**	**2008**
Sales	322.8	320.1
Net income	27.2	26.8
Cash flow from operations	15.3	38.1

    During 2009 the company *most likely* decreased the:

    A. proportion of sales made on a cash basis.
    B. inventory, anticipating lower demand for its products in 2010.
    C. proportion of interest-bearing debt relative to trade accounts payable.

    Answer: A

"Understanding the Cash Flow Statement", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 267, 280-281
Study Session 8-34-g
Analyze and interpret a cash flow statement using both total currency amounts and common-size cash flow statements.

Sales, net income, and net margin are relatively constant for the two years. The substantial drop in cash flow from operations could be attributed to an increase in receivables and/or inventory. A decrease in the proportion of cash sales implies an increase in the proportion of credit sales, increasing accounts receivable. An increase in accounts receivable would decrease cash flow from operations.

47. According to International Financial Reporting Standards which of the following is one of the conditions that *must* be met for revenue recognition to occur?

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

Answer: A

"Understanding the Income Statement", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA

2010 Modular Level I, Vol. 3, pp. 144-145
Study Session 8-32-b
Explain the general principles of revenue recognition and accrual accounting, demonstrate specific revenue recognition applications (including accounting for long-term contracts, installment sales, barter transactions, and gross and net reporting of revenue) and discuss the implications of revenue recognition principles for financial analysis.

The IASB's conditions that must be met include that the costs incurred can be reliably measured, there is assurance of payment, not necessarily an actual receipt of any payment, and that the significant risks and rewards of ownership have been transferred, which is normally (but not always) when the goods have been delivered.

48. A company accrued wages of $2,000 and collected accounts receivable of $10,000. Which of the following *best* describes the effect of these two transactions on the company?

A. Net income will increase
B. Current ratio will decrease
C. Cash from operations will decrease

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

2010 Modular Level I, Vol. 3, pp. 267-269, 275-276
"Financial Analysis Techniques", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA

2010 Modular Level I, Vol. 3, pp. 328-329
Study Session 8-34-g, 8-35-d
Analyze and interpret a cash flow statement using both total currency amounts and common-size cash flow statements.

Calculate, classify, and interpret activity, liquidity, solvency, profitability, and valuation ratios.

Accruing wages increases current liabilities and expenses, but collecting receivables has no effect on current assets or sales therefore the current ratio and net income both decrease. Collecting accounts receivable increases cash flow from operations and accruing wages increases current liabilities, which also increases cash flow from operations so cash from operations will increase not decrease.

49. A company had 100,000 common shares outstanding on 1 January 2009. The company has no plans to issue additional shares or purchase treasury shares during the year, but is planning either a two-for-one stock split or a 100 percent stock dividend on 1 July. The number of shares used to determine earnings per share at 31 December 2009, will be *closest* to:

A. 200,000 for both the stock split and the stock dividend.
B. 200,000 for the stock split and 150,000 for the stock dividend.
C. 150,000 for the stock split and 200,000 for the stock dividend.

Answer: A

"Understanding the Income Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 170-172
Study Session 8-32-g
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.

Stock dividends and stock splits are treated in the same way for purposes of determining weighted average number of shares outstanding; the adjustment in the number of shares is made as if the stock split or dividend occurred at the beginning of the year.

50. Under International Financial Reporting Standards (IFRS) the preparation of a complete set of financial statements is *best* described as a(n):

A. objective of financial reporting.
B. general requirement for financial statements.
C. qualitative characteristic of the IFRS Framework.

Answer: B

"Financial Reporting Standards," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 111-112
Study Session 7-31-e
Explain the general requirements for financial statements.

The preparation of a complete set of financial statements is a general requirement for financial statements.

51. Which of the following transactions will *most likely* result in a decrease in a company's current ratio? The:

A. recording of a warranty expense.
B. recording of revenue before cash is received.
C. payment of a property insurance policy for the following year.

Answer: A

"Understanding the Income Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn, CFA

2010 Modular Level I, Vol. 3, p. 160

"Understanding the Balance Sheet," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn, CFA

2010 Modular Level I, Vol. 3, p. 197
"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn
2010 Modular Level I, Vol. 3, p. 329
Study Session 8-32-c, 8-33-a, 8-35-d
Discuss the general principles of expense recognition, such as the matching principle, specific expense recognition applications (including depreciation of long-term assets and inventory methods), and the implications of expense recognition principles for financial analysis.

Illustrate and interpret the components of the balance sheet, and discuss the uses of the balance sheet in financial analysis.

Calculate, classify and interpret activity, liquidity, solvency, profitability, and valuation ratios.

The recording of a warranty expense will create a warranty liability and the resulting increase in current liabilities will decrease the current ratio.

52. A company issued bonds in 2009 that mature in 2019. The measurement basis that will *most likely* be used on the 2009 balance sheet for the bonds is:

A. market value.
B. historical cost.
C. amortized cost.

Answer: C

"Understanding the Balance Sheet," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn, CFA

2010 Modular Level I, Vol. 3, pp. 223-225
Study Session 8-33-e, f
Explain the measurement bases (e.g., historical cost and fair value) of assets and liabilities, including current assets, current liabilities, tangible assets, and intangible assets.
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.

Bonds payable issued by a company are financial liabilities that are measured at amortized cost.

53. Which of the following transactions is *least* likely to increase a company's reported cash from operations?

A. Securitizing accounts receivable
B. Delaying payments made to suppliers
C. Using short-term debt to reduce an existing account payable

Answer: C

"Accounting Shenanigans on the Cash Flow Statement," Marc A. Siegel
2010 Modular Level I, Vol. 3, pp. 592-595
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.

Using short-term debt to pay down payables will have no effect on the cash from operations. Payables will decrease which decreases cash from operations, but short-term debt will increase, which is an offsetting increase in cash from operations, resulting in no net effect on cash from operations.

54. The settlement value for a liability is *best* described as:

A. the amount of proceeds received in exchange for the obligation.
B. the discounted value of the future cash flows that are required to satisfy the obligation.
C. the undiscounted amount of cash or cash equivalents expected to be paid to satisfy the obligation.

Answer: C

"Financial Reporting Standards", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp.111
Study Session: 7-31-d
Describe the International Financial Reporting Standards (IFRS) framework, including the qualitative characteristics of financial statements, the required

reporting elements, and the constraints and assumptions in preparing financial statements.

The settlement value for a liability is the undiscounted amount of cash or cash equivalents expected to be paid to satisfy the liabilities in the normal course of business.

55. A company has just completed the sale of a tract of land for €3.5 million which was originally acquired at a cost of €2.0 million. The purchaser made a down-payment of €200,000 with the remainder to be paid in equal installments over the next 10 years. A short time after the sale, significant doubt arose about the purchaser's ability to meet the future obligations for the land purchase. When compared to the cost recovery method of revenue recognition, the profit (in €) that the company will recognize in the year of the sale under the installment method is *most likely* to be higher by:

A. 85,714.
B. 114,286.
C. 150,000.

Answer: A

"Understanding the Income Statement", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp.150-152
Study Session: 8-32-b
Explain the general principles of revenue recognition and accrual accounting, demonstrate specific revenue recognition applications (including accounting for long-term contracts, installment sales, barter transactions, and gross and net reporting of revenue), and discuss the implications of revenue recognition principles for financial analysis;

Under the installment method, the portion of the total profit of the sale (3.5 – 2.0 = 1.5) that is recognized in each period is determined by the percentage of the total sales price for which the seller has received cash, which is €1.5/€3.5 x €200,000 = €85,714; under the cost recovery method, no profit is recognized until the cash amounts received have exceed the seller's cost of the property.

56. Presented below are abbreviated balance sheets for two merchandising companies following the format found in each of their annual reports.

Company A (in \$ U.S. Millions)			**Company B (in ¥ Millions)**	
Assets			**Assets**	
Noncurrent assets	9,640		Current Assets	4,333
Current Assets	2,096		Noncurrent assets	19,923
Total Assets	11,736		Total Assets	24,256
Shareholders' Equity			**Liabilities & Shareholders' Equity**	
Issued Capital	2,490		Current liabilities	2,413
Retained Earnings	1,333		Non-Current Liabilities	6,847
Other Reserves	2,926			
Minority Interests	506		Minority Interests	1,045
Total Equity	7,255			
			Shareholders' Equity	
Non-Current Liabilities	3,313		Issued Capital	5,149
Current liabilities	1,168		Retained Earnings	2,755
Total Liabilities	4,481		Other Reserves	6,047
			Total Equity	13,951
Total Equity & Liabilities	11,736		Total Equity & Liabilities	24,256

Which of the companies *most likely* prepares their financial statements in accordance with U.S. GAAP (generally accepted accounting principles)?

A. Both
B. Company A only
C. Company B only

Answer: C

"Understanding the Balance Sheet", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp.203-207

Study Session: 8-33-b
Describe the various formats of balance sheet presentation.

Company A prepares its financial statements under IFRS while company B uses U.S. GAAP. The common practice under IFRS presentation is to present noncurrent assets before current assets and long term liabilities before current ones. Minority interest must be shown as a component of equity under IFRS. Under U.S. GAAP, current assets are presented before long term assets and current liabilities before long term ones; under U.S. GAAP, minority interest is often shown "in-between" liabilities and equity (although it could also be shown as an equity component).

57. An analyst makes the appropriate adjustments to the financial statements of retail companies that are lessees using a substantial number of operating leases. Compared to ratios computed from the unadjusted statements, the ones computed from the adjusted statements would *most likely* be higher for:

A. the debt-equity ratio but not the interest coverage ratio.
B. the interest coverage ratio but not the debt-equity ratio.
C. both the debt-equity ratio and the interest coverage ratio.

Answer: A

"Long-term Liabilities and Leases," Elizabeth A. Gordon and R. Elaine Henry, CFA
2010 Modular Level I, Vol. 3, pp. 537, 544-547
Study Session 9-39-g
Determine the effects of finance and operating leases on the financial statements and ratios of the lessees and lessors.

The adjustments to convert operating leases into capital leases would increase the amount of total debt in the debt-equity ratio thus increasing the ratio; the portion of the lease payment estimated to be lease interest expense would lower the interest coverage ratio.

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

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

Answer: C

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

2010 Modular Level I, Vol. 3, pp. 312-315, 329
“Working Capital Management”, Edgar A. Norton, Jr. CFA, Kenneth L. Parkinson, and Pamela P. Peterson, CFA
2010 Modular Level I, Vol. 4, pp 95-98
Study Session 8-35-a, 11-46-b
Evaluate and compare companies using ratio analysis, common-size financial statements, and charts in financial analysis.
Compare a company’s liquidity measures with those of peer companies.

A common-size balance sheet expresses all balance sheet accounts as a percentage of total assets.

59. An analyst gathers the following information ($ millions) about three companies operating in the same industry:

Company	Annual Depreciation Expense	Accumulated Depreciation
1	10.8	58.9
2	27.8	80.3
3	33.6	128.8

Although the companies have different levels of sales and assets, they are all experiencing sales growth at about the same rate and use the same type of equipment in the manufacturing process. All three companies also use the same depreciation method. Which company is *least likely* to require major capital expenditures in the near future? Company:

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

Answer: B

“Long-Lived Assets,” R. Elaine Henry, CFA and Elizabeth Gordon
2010 Modular Level I, Vol. 3, pp. 438-439
Study Session 9-37-e
Discuss the use of fixed asset disclosures to compare companies’ average age of depreciable assets, and calculate, using such disclosures, the average age and average depreciable life of fixed assets.

Company	Average age of assets = accumulated depreciation/annual depreciation expense
1	58.9/10.8 = 5.5 years

2	80.3/27.8 = 2.9 years
3	128.8/33.6 = 3.8years
Because Company 2 has the lowest average age of assets, it is least likely to need major capital expenditures	

60. The following information (U.S. $ millions) for two companies operating in the same industry during the same time period is available:

	Company A	Company B
Net sales	120	300
Total assets	70	140
Total liabilities	25	40

If both companies achieve a return on equity of 15% for the period, which of the following statements is *most likely* correct? Compared to Company B, Company A has a:

A. higher net profit margin.
B. higher total asset turnover.
C. lower financial leverage multiplier.

Answer: A

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

Modular 2010 Level I, Vol. 3 pp.342-344
"Financial Statement Analysis", Pamela P. Peterson, CFA

2010 Modular Level I, Vol. 4, pp.142-146
Study Session 8-35-d, f, 11-47
Calculate, classify, and interpret activity, liquidity, solvency, profitability, and valuation ratios

The DuPont system can be used to break down the ROE into three components: **ROE = Profit margin x total asset turnover x financial leverage multiplier.**				
Component	Company A		Company B	
Total asset turnover (sales/total assets)	**120/170**	**1.71**	**300/140**	**2.14**
Company A has a lower total asset turnover, not higher				
Equity (total assets – total liabilities)	**70-25**	**$45**	**140-40**	**$100**
Financial leverage multiplier (assets/equity)	**70/45**	**1.56**	**140/100**	**1.40**

Company A has a higher financial leverage multiplier, not lower
Company A's Net Profit Margin from ROE: = 15% = (net profit margin) x 1.71 x 1.56
Company A's net profit margin = 5.6%
Company A's Net Profit Margin from ROE: = 15% = (net profit margin) x 2.14 x 1.40
Company A's net profit margin = 5.0%
The net profit margin could also be computed by computing net income for each company from the basic ROE definition: ROE = Net Income/Common Equity
For Company A: ROE = 15% = net income/ (70-25); net income is 6.75, and net profit margin = net income/Sales = 6.75/ 120 = 5.6%.)
For Company B: ROE = 15% = net income/ (140-40); net income is 15, and net profit margin = net income/Sales = 15/ 300 = 5.0%.)
Company A has a higher net profit margin than Company B

61. Is the reversal of an inventory write-down permitted under U.S. GAAP (generally accepted accounting principles) and International Financial Reporting Standards (IFRS)?

    A. No, under both
    B. Yes, under both
    C. Yes under IFRS but not under U.S. GAAP

    Answer: C

    "Inventories," Elbie Antonites, CFA and Michael Broihahn, CFA
    2010 Modular Level I, Vol. 3, pp. 380-381
    "International Standards Convergence," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA and Michael A. Broihahn, CFA
    2010 Modular Level I, Vol. 3, pp. 653-654
    Discuss how inventories are reported in the financial statements and how the lower of cost or net realizable value is used and applied.
    Study Session 9-36-b, 10-43-a
    Discuss how inventories are reported in the financial statements and how the lower of cost or net realizable value is used and applied.
    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).

The reversal of an inventory write-down is permitted under IFRS but not under U.S. GAAP.

62. A retail company prepares its financial statements in accordance with U.S. GAAP (generally accepted accounting principles). Its purchases and sales of inventory for its first two years of operations are listed below.

	First Year	**Second Year**
Units Purchased	80,000	100,000
Unit Cost	$8.43	$12.25
Units Sold	73,000	78,000
Unit Selling Price	$15.00	$16.00

In its second year of operation, the company's ending inventory is $348,003. Which of the following inventory cost flow assumptions is the company was *most likely* using?

A. FIFO
B. LIFO
C. Weighted average cost

Answer: C

"Inventories," Elbie Antonites, CFA and Michael Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 382-384
Study Session 9-36-c
Compute ending inventory balances and cost of goods sold using the FIFO, weighted average cost, and LIFO methods to account for product inventory and explain the relationship among and the usefulness of inventory and cost of goods sold data provided by the FIFO, weighted average cost, and LIFO methods when prices are 1) stable, 2) decreasing, or 3) increasing.

The company is accounting for its inventory using the weighted average cost method.
In the 2^{nd} year of operations, under Weighted Average Cost:
Units available for sale include ending inventory from year 1 plus purchases for year 2:
7,000 + 100,000 = 107,000
Cost of Goods Available for Sale: 7,000 x $8.43 + 100,000 x $12.25 = $1,284,000
Unit Cost: $1,284,000/107,000 = $12.00
End Inventory = 107,000 –78,000 = 29,000 units. $12.00 x 19,000 = $348,003

63. A company issued a $50,000 7-year bond for $47,565. The bonds pay 9 percent per annum and the yield-to-maturity at issue was 10 percent. The company uses the effective interest rate method to amortize any discounts or premiums on bonds. After the first year, the yield to maturity on bonds equivalent in risk and maturity to these bonds is 9 percent. The amount of the bond discount amortization ($) recorded in the second year is *closest* to:

A. 282.
B. 348.
C. 2,178.

Answer: A

"Long-term Liabilities and Leases," Elizabeth A. Gordon and R. Elaine Henry, CFA
2010 Modular Level I, Vol. 3, pp.520-523
Study Session 9-39-a
Compute the effects of debt issuance and amortization of bond discounts and premiums on financial statements and ratios.

Interest paid = Market rate at issue x Issued amount of bonds = 9% x $50,000
Interest expense = Market rate at issue x Carrying (BV) of bonds
Amortization of discount = Interest expense - Interest paid

Year	Interest Paid	Interest Expense	Amortization of Discount	Carrying Value
0				47,565
1	4,500	4,757	257	47,822
2	4,500	4,782	282	48,104

Amortization in the 2nd year is 282

64. The following selected information is from a company's most recent financial statements:

	(£ millions)	
	2009	**2008**
Sales	2,801	2,885
Cost of Goods Sold	1,969	2,071
Interest Expense	123	110
Cash & Marketable Securities	108	105
Accounts Receivable	318	286
Inventories	248	285
Accounts Payable	361	346
Notes Payable	50	99

The 2009 cash conversion cycle, in days, is *closest* to:

A. 23.
B. 26.
C. 28.

Answer: A

"Financial Analysis Techniques", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 329-330
"Working Capital Management," Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and Pamela P. Peterson, CFA
2010 Modular Level I, Vol. 4 pp.89-93
Study Session 8-35-d, 11-46-c
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.

Activity Ratios		**Calculation**	
Inventory Turnover	7.39	COGS/Average Inventory	1969/(248+285)/2
DOH (days on hand)	49.4	365/Inventory Turnover	365/7.39
Receivable Turnover	9.27	Sales/Average Receivables	2801/(318+286)/2

DSO (days sales o/s)	39.4	365/Receivables Turnover	365/9.27
Payables Turnover	5.57	COGS/Average Payables	1969/(361+346)/2
Days in Payables	65.5	365/Payables Turnover	365/5.57
Cash Conversion Cycle	**23.3**	**DOH + DSO – Days In Pay**	**49.4 + 39.4 – 65.5**

65. In the evaluation of credit ratings, a company will *most likely* be assigned a higher credit rating if it has a:

A. lower EBITDA/Interest ratio.
B. lower dividends-to-total-debt ratio.
C. higher five year average of its coefficient of variation of its operating margin.

Answer: B

"Statistical Concepts and Market Returns," Richard A. DeFusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2010 Modular Level I, Vol. 1, pp. 319-321
"Financial Analysis Techniques", Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 331-335
"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, Vol. 3, pp. 617-620
Study Session 2-7-i, 8-35-d, 10-42-c
Define, calculate, and interpret the coefficient of variation and the Sharpe ratio.
Calculate, classify and interpret activity, liquidity, solvency, profitability, and valuation ratios.
Describe the role of financial statement analysis in assessing the credit quality of a potential debt investment.

A lower dividend means more retention and increased equity: higher retained cash flow will result in a higher credit rating

66. A company purchased a €2,000 million long-term asset in 2009 when the corporate tax rate was 30 percent.

Asset year end value for (All figures in € millions.)	**2010**	**2009**
Accounting purposes	1,800	1,900
Tax purposes	1,280	1,600

On January 15, 2010 the government lowered the corporate tax rate to 25 percent for 2010 and beyond. The deferred tax liability (€) as at 31 December 2010 is *closest* to:

A. 130.
B. 156.
C. 205.

Answer: A

"Income Taxes," Elbie Antonites, CFA and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 477-478, 483-484
Study Session: 9-38-d
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.

The deferred tax liability equals the difference between the value for accounting and the value for tax times the current tax rate in effect. (1,800 – 1,280) x 0.25 = 520 x 0.25 = 130

67. Which of the following is *least likely* a condition present in a "fraud triangle"?

A. Constraining debt covenants.
B. Adding independent members to the Board of Directors.
C. Management's belief that a decline in performance is due to temporary economic conditions.

Answer: B

"Financial Reporting Quality: Red Flags and Accounting Warning Signs," Thomas R. Robinson, CFA and Paul Munter
2010 Modular Level I, Vol. 3, p. 574
"The Corporate Governance of Listed Companies: A Manual for Investors,"
2010 Modular Level I, Vol.4, pp. 171–176
Study Session: 10-40-c, 11-48-c

Describe the "fraud triangle".
Describe board independence and explain the importance of independent board members in corporate governance.

The "fraud triangle" requires incentives (e.g., debt covenants), opportunities, and management's ability to rationalize (temporary economic conditions). Adding independent members to the Board of Directors should improve corporate governance and hence decrease the opportunity for fraud.

68. A company is buying back its stocks to offset the dilution of earnings from its stock option program. Which of the following statements *best* describes the effect on the financial statements of the amount spent to buy back the stocks? The amount spent reduces:

A. net income.
B. cash from operating activities.
C. cash from financing activities.

Answer: C

"Understanding the Cash Flow Statement" Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R Elaine Henry, CFA, and Michael A. Broihahn, CFA
2020 Modular Level I, Vol. 3, pp. 251-252
"Accounting Shenanigans on the Cash Flow Statement," Marc A. Siegel
2010 Modular Level I, Vol. 3, p. 595-598
Study Session 8-34-a, 10-41
Compare and contrast cash flows from operating, investing and financing activities and classify cash flow items as relating to one of these three categories, given a description of the items.
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, and
- using stock buybacks to offset dilution of earnings

The amount spent to buy back stocks to offset dilution is classified as a financing activity on the cash flow statement and therefore cash from financing decreases.

Questions 69 through 78 relate to Corporate Finance

69. A company is determining the cost of debt for use in its weighted average cost of capital. It has recently issued a 10-year, 6 percent semi-annual coupon bond for $864. The bond has a maturity value of $1,000. If the marginal tax rate is 35 percent, the cost of debt (%) they should use in their calculation is *closest* to:

    A. 2.6.
    B. 3.9.
    C. 5.2.

    Answer: C

    "Cost of Capital," Yves Courtois, CFA, Gene C. Lai, and Pamela P. Peterson, CFA
    2010 Modular Level I, Vol. 4, pp. 42, 47-49
    Study Session 11-45-b, f
    Describe how taxes affect the cost of capital from different capital sources.
    Calculate and interpret the cost of fixed rate debt capital using the yield-to-maturity approach and the debt-rating approach.

    The pre-tax cost of debt is the YTM of the bond. The YTM of the bond can be found by solving the following equation for *i*:

    $$864 = \left(\sum_{t=1}^{20} \frac{30}{(1+i)^t} \right) + \frac{1000}{(1+i)^{20}}$$

    Using a financial calculator, enter N=20, PV=-864, PMT=30, and FV=1,000. Compute I/YR. The result (4%) is the semi-annual rate; double it to get the annual rate, 8%. This is the pre-tax cost of debt. Multiplying the pre-tax cost of debt by 1 – tax rate gives the result 5.2% (8 * 0.65 = 5.2). Note: because the bond pays coupons semi-annually, there are 20 periods (10 years times two payments per year) and the periodic coupon payment is $30 (6% of $1,000 per year paid in two equal payments every six months).

70. The post-audit performed as part of the capital budgeting process is *least likely* to:

    A. improve a firm's operations.
    B. produce concrete ideas for future investments.
    C. force management to revise the original forecast to match actual results.

    Answer: C

    "Capital Budgeting," John D. Stowe, CFA and Jacques R. Gagné, CFA
    2010 Modular Level I, Vol. 4, pp. 6-7

Study Session 11-44-a
Explain the capital budgeting process, including the typical steps of the process, and distinguish among the various categories of capital projects.

The purposes of the post-audit process are to monitor forecasts, improve operations, and generate concrete ideas for future investments. The original forecast is, in effect, a "sunk cost." The point is not to revise after the fact the original forecast, but to create a more accurate forecast over the new planning horizon.

71. A company is considering building a distribution center on undeveloped land that it acquired more than ten years ago at a cost of $400,000. The company estimates the cost of putting in utilities, sewers, roads and other such costs of preparing the land for the distribution center at $200,000. Alternatively, the undeveloped land could be sold today to another company for $600,000. In evaluating this capital project, the investment outlay associated with the use of the land by the distribution center will *most likely* be:

A. $400,000.
B. $600,000.
C. $800,000.

Answer: C

"Capital Budgeting," John D. Stowe, CFA and Jacques R. Gagné, CFA
2010 Modular Level I, Vol. 4, pp. 9-10
Study Session 11-44-b
Discuss the basic principles of capital budgeting, including the choice of the proper cash flows.

The investment outlay associated with the use of the land should reflect the opportunity cost of the foregone sale ($600,000) plus the incremental cost of preparing the land for use as a distribution center ($200,000). $600,000 plus $200,000 equals $800,000.

72. When considering capital projects, which of the following statements is *most* accurate? Compared to the NPV method, the IRR method:

A. can result in multiple values.
B. has the more appropriate reinvestment rate assumption.
C. uses more accurate estimates of the project's cash flows.

Answer: A

"Capital Budgeting," John D. Stowe, CFA and Jacques R. Gagné, CFA
2010 Modular Level I, Vol. 4, pp. 19-25
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 associated with each of the evaluation methods.

If the cash flows of the project are nonconventional, the IRR method can result in multiple IRRs.

73. A company wants to determine the cost of equity to use in the calculation of its weighted average cost of capital. The CFO has gathered the following information:

Rate of return on 3-month Treasury bills	3.0%
Rate of return on 10-year Treasury bonds	3.5%
Market equity risk premium	6.0%
The company's estimated beta	1.6
The company's after-tax cost of debt	8.0%
Risk premium of equity over debt	4.0%
Corporate tax rate	35%

Using the bond-yield-plus-risk-premium approach, the cost of equity (%) for the company is *closest* to:

A. 12.0.
B. 16.3.
C. 18.3.

Answer: B

"Cost of Capital," Yves Courtois, CFA, Gene C. Lai, and Pamela P. Peterson, CFA
2010 Modular Level I, Vol. 4, p. 57
Study Session 11-45-h
Calculate and interpret the cost of equity capital using the capital asset pricing model approach, the dividend discount model approach, and the bond-yield-plus risk-premium approach.

The cost of equity using bond-yield-plus-risk-premium approach is to take the before-tax cost of debt plus the risk premium of equity over debt. The before-tax cost of debt is the after-tax cost of debt divided by (1- tax rate). 8.0/(1 – 0.35) = 12.3%.
Adding the risk premium results in a cost of equity of 12.3% + 4% = 16.3%.

74. A publicly listed company has a 12-person Board of Directors whose composition is as follows:

- the Chairman, who is the past president of the company and was named Chairman on his retirement date four years ago,
- five members of senior management including the current president, and
- six outside directors.

Each member is elected for a two-year term and one-half of the positions stand for election every year. The three members of the Audit Committee are all outside directors and have relevant financial experience. The Remuneration Committee is composed of the Chairman and two outside directors. Which of the following actions would provide the *greatest* improvement in the corporate governance of this company?

A. The Chairman of the Board should be an independent director.
B. All members of the Board of Directors should stand for election every year.
C. The company's Vice-President of Finance should be a member of the audit committee.

Answer: A

"The Corporate Governance of Listed Companies: A Manual for Investors,"
2010 Modular Level I, Vol. 4, pp. 174-185
Study Session 11-48-b, c
Discuss and critique characteristics and practices related to board and committee independence, experience, compensation, external consultants and frequency of elections and determine whether they are supportive of shareowner protection.
Describe board independence and explain the importance of independent board members in corporate governance.

If the chair of the board is a former chief executive of the company, it may hamper efforts to undo the mistakes made by him or her as chief executive. It is not clear if it is better to have all members elected annually (more flexibility to meet changes in the marketplace) or if it is better to have staggered board terms (better continuity of board expertise). All members of the audit committee should be independent members of the board.

75. Which of the following methods would be *least* likely to improve the cash collections of a retail organization?

A. Lockbox
B. Debit cards
C. Electronic checks

Answer: A

“Working Capital Management,” Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and
Pamela P. Peterson, CFA
2010 Modular Level I, Vol. 4, pp. 116-118
Study Session 11-46-d
Identify and evaluate the necessary tools to use in managing a company’s net daily cash position.

A lockbox is a deposit system coordinated with a bank and is useful when the customer is not paying at the time of sale. In retail organizations, the customer normally pays at the time of sale and the best ways to improve cash collections are to ensure the payments made at that time have no credit risk for the seller. Debit cards, credit cards and electronic checks eliminate the credit risk for the seller.

76. Assuming current assets and current liabilities remain a constant proportion of sales (30 percent and 20 percent respectively), as sales grow 5 percent annually, through time the current ratio will *most likely*:

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

Answer: C

“Financial Statement Analysis,” Pamela P. Peterson, CFA
2010 Modular Level I, Vol.4, pp. 151-159
Study Session 11-47
The candidate should be able to demonstrate the use of pro forma income and balance sheet statements.

Because the proportion relative to sales does not change, the current ratio will remain unchanged.

77. Which is *least likely* to be a component of a developing country’s equity premium?

A. Sovereign yield spread
B. Annualized standard deviation of the developing country’s equity index
C. Annualized standard deviation of the sovereign bond market in terms of the developing country’s currency

Answer: C

“Cost of Capital,” Yves Courtois, CFA, Gene C. Lai, and Pamela P. Peterson, CFA
2010 Modular Level I, Vol.4, pp. 65-66
Study Session 11-45-j
Explain the country equity risk premium in the estimation of the cost of equity for a company located in a developing market.

The annualized standard deviation of the sovereign bond market in terms of the developing country’s currency is not part of the equity premium calculation. Country equity premium = sovereign yield spread * (annualized standard deviation of equity index ÷ annualized standard deviation of the sovereign bond market in terms of the developed market currency)

78. A company extends its trade credit terms by four days to all its credit customers. The *most likely* effect of this change to the company’s credit customers is a four day:

A. increase in their operating cycle.
B. decrease in their operating cycle.
C. decrease in their net operating cycle.

Answer: C

"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, R. Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol.3, p. 329
“Working Capital Management” Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and Pamela P. Peterson, CFA
2010 Modular Level I, Vol.4, page 101
Study Session 8-35-d; 11-46-c
Calculate, classify, and interpret activity, liquidity, solvency, profitability, and valuation ratios.
Evaluate the overall working capital effectiveness of a company, using the operating and cash conversion cycles, and compare its effectiveness with other peer companies.

A four day increase in payables will reduce the cash conversion cycle (net operating cycle) by four days.

Questions 79 through 90 relate to Equity Investments

79. The issue of differences in accounting conservatism between companies is *best* addressed when companies are compared using which of the following ratios?

    A. Price-to-earnings
    B. Price-to-cash flow
    C. Price-to-book value

    Answer: B

    "Introduction to Price Multiples," John D. Stowe, CFA, Thomas R. Robinson, CFA, Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
    2010 Modular Level I, Vol. 5, pp. 215-217
    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.

    Using price-to-cash flow rather than price-to-earnings addresses the issue of differences in accounting conservatism between companies (differences in quality of earnings).

80. A continuous market *most likely* exists for a stock when:

    A. specialists or market makers attempt to derive new equilibrium prices in an orderly manner.
    B. new information about the company prospects is continuously released to market participants.
    C. trades occur at any time the market is open wherein stocks are priced either by auction or by dealers.

    Answer: C

    "Organization and Functioning of Securities Markets," Frank K. Reilly, CFA and Keith C. Brown, CFA
    2010 Modular Level I, Vol. 5, pp. 14-15
    Study Session 13-52-c
    Distinguish between call and continuous markets.

    In a continuous market, trades occur at any time the market is open and the stocks are priced either by auction or by dealers. The dealers provide liquidity for investors by buying and selling the shares of stock for themselves.

81. Capital market efficiency is desirable, but there are limitations to achieving full market efficiency. Which of the following is *least likely* to be a limitation to achieving full capital market efficiency?

A. Survivorship bias
B. Limits of arbitrage
C. Cost of information

Answer: A

"Market Efficiency and Anomalies," Vijay Singal, CFA
2010 Modular Level I, Vol. 5, pp. 107-109
Study Session 13-55-a
Explain the three limitations to achieving fully efficient markets.

The three limitations for achieving full capital market efficiency are: 1) cost of information, 2) cost of trading, and 3) limits of arbitrage. Survivorship bias is not one of them.

82. A price-weighted index series is composed of the following three stocks:

Stock	*Number of Shares Outstanding Before Stock Split*	*Market Price Before Split Day 1*	*Market Price After Split Day 3*
X	1,000,000	$10	$12
Y	5,000,000	$20	$19
Z	4,000,000	$60	$22

If stock Z completes a three-for-one stock split at the end of Day 1, the value of the index after the split (at the end of Day 3) is *closest* to:

A. 29.9.
B. 31.7.
C. 32.3.

Answer: B

"Security-Market Indexes," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 46-48
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 indices and compute a price-weighted, a value-weighted, and an unweighted index series for three stocks.

The price-weighted index is computed by totaling the current prices of the stocks in the index and dividing the sum by a divisor that has been adjusted for stock splits and changes in the sample over time.

Index before the split = (10 + 20 + 60) / 3 = 30; New divisor: [(10 + 20 + 20) / X] = 30; X = 1.67

Index after the split = (12 + 19 + 22) / 1.67 = 31.7

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

Net profit margin	8.0%
Return on assets	10.0%
Financial leverage (total assets/equity)	2.5
Beta for the company's stock	1.5
Expected rate of return on the market index	10.0%
Risk-free rate of return	5.0%

The analyst expects the information above to accurately reflect the future. If the company wants to achieve a growth rate of 15% without changing its capital structure or issuing new equity, the company's maximum dividend payout ratio (in %) is *closest* to:

A. 25.
B. 40.
C. 60.

Answer: B

"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 342-347
"An Introduction to Security Valuation," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 158-159
Study Session 8-35-e, f; 14-56-g
Demonstrate how ratios are related and how to evaluate a company using a combination of different ratios.
Demonstrate the application of and interpret changes in the component parts of the DuPont analysis (the decomposition of return on equity).
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.

ROE = ROA x Financial leverage; Retention ratio = growth rate / ROE;
Payout ratio = 1 – Retention ratio
ROE = (10.0%)(2.5) = 25%; Retention ratio = 0.15/0.25 = 0.60;
Payout ratio = 1 – 0.60 = 40.0%

84. A company has furnished the following information:

Return on equity	20%
Earnings retention rate	50%
Current dividend per share (D_o) paid on the company's common stock	€2.00
Required rate of return on the company's common stock	15%
Current stock price	€50
Company's P/E ratio	30x
Industry average P/E ratio	20x
Stock's beta	0.7

According to the dividend discount model and the other data given, the company's stock is *best* described as a:

A. growth stock.
B. cyclical stock.
C. speculative stock.

Answer: C

"An Introduction to Security Valuation," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 142, 158
"Company Analysis and Stock Valuation," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 176-178
Study Session 14-56-c, f; 14-58-a
Calculate and interpret the value of both a preferred stock and a common stock using the dividend discount model (DDM).
Estimate the dividend growth rate, given the components of the required rate of return incorporating the earnings retention rate and current stock price.
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.

A speculative stock is (i) substantially overvalued and (ii) it sells at an extremely high P/E ratio. The computations for intrinsic value are: Implied dividend growth rate = ROE x RR = 20% x 0.5 = 10%; Intrinsic value of the stock = €2.20 / (15% – 10%) = €44.00 compared to the market price of €50. The stock's P/E is 30x versus the industry average of 20x.

85. An investor opens a margin account with an initial deposit of $5,000. He then purchases 300 shares of a stock at $30. His margin account has a maintenance margin requirement of 30%. Ignoring commissions and interest, the price (in $) at which the investor receives a margin call is *closest* to:

A. 19.05.
B. 23.08.
C. 23.81.

Answer: A

"Organization and Functioning of Securities Markets," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 26-28
Study Session 13-52-g
Describe the process of buying a stock on margin, compute the rate of return on a margin transaction, define maintenance margin, and determine the stock price at which the investor would receive a margin call.

Determine the stock price at which the investor receives a margin call by solving for the critical stock price, P, as:
[(#of shares x P) – Margin Loan] / (# of shares x P) = % of Maintenance Margin
(300P – $4,000) / 300P = .30;
P = $4,000 / 210 = $19.05

86. The following information is from a company's most recent financial statements:

U.S. $ in millions except for shares outstanding and tax rate	
Preferred stock	40
Common stock	120
Additional paid-in capital	30
Retained earnings	190
Treasury stock	(55)
Total shareholders' equity	325
Total number of common shares outstanding	10 million
Tax rate	40%

The company uses the LIFO inventory method. The footnotes to the financial statements indicate that if the company had used the FIFO method, the inventory balance would have been $45 million higher than the amount reported on the company's most recent financial statements. If the company's common stock is currently selling for $59 per share, the company's adjusted price-to book-value ratio is *closest* to:

A. 1.67.
B. 1.79.
C. 1.89.

Answer: C

"Inventories," Elbie Antonites, CFA and Michael Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 396-402
"Introduction to Price Multiples," John D. Stowe, CFA, Thomas R. Robinson, CFA, Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
2010 Modular Level I, Vol. 5, pp. 207-212
Study Session 9-36-g, 14-59-a, b
Calculate adjustments to reported financial statements related to inventory assumptions to aid in comparing and evaluating companies.
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;
Calculate and interpret P/E, P/BV, P/S, and P/CF.

Adjusted book value equals shareholders' equity adjusted for equity claims that are senior to common stock and inventory method, and other adjustments related to pension and retirement plans. Dividing by the number of outstanding common shares results in the adjusted book value per share.
Adj. price to book value ratio = Current stock price / Adj. book value per share
Adj. book value per share = [$325 – $40 + $45(0.6)] / 10 = $31.20

Adj. price to book value ratio = \$59 / \$31.20 = 1.89.

87. An investor gathers the following data for a company:

Net profit margin	2%
Total assets	\$200 million
Total liabilities	\$120 million
Net income	\$10 million
Dividends paid on common stock	\$2 million

The company's estimated dividend growth rate (in %) is *closest* to:

A. 8.0.
B. 10.0
C. 12.5.

Answer: B

"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2010 Modular Level I, Vol. 3, pp. 342-344
"An Introduction to Security Valuation," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 158-159
Study Session 10-35-e, f; 14-56-f
Demonstrate how ratios are related and how to evaluate a company using a combination of different ratios.
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 rate of return incorporating the earnings retention rate and current stock price.

ROE = Net income / Equity;
Retention rate = 1 – (Dividends / Net income);
g = Retention rate x Return on equity
Equity = \$200 million - \$120 million = \$80 million;
ROE = \$10 million / \$80 million = 12.5%.
Alternatively using the DuPont Model: ROE = Return on assets x Financial leverage or
Profit margin x Total assets turnover x Financial leverage;
Sales = NI / NPM = \$10 million / 0.02 = \$500 million; TAT = 500 / 200 = 2.5
Financial Leverage = 200 / 80 = 2.5

ROE = 2 x 2.5 x 2.5 = 12.5%
Retention rate = 1 – ($2 million / $10 million) = 80%;
Growth rate = 12.5% x 80% = 10%.

88. A company's $100 par perpetual preferred stock has a dividend rate of 7 percent and a required rate of return of 11 percent. The company's earnings are expected to grow at a constant rate of 3 percent per year. If the market price per share for the preferred stock is $75, the preferred stock is *most* appropriately described as being:

A. overvalued by $11.36.
B. undervalued by $15.13.
C. undervalued by $36.36.

Answer: A

"An Introduction to Security Valuation," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 134-135
Study Session 14-56-c
Calculate and interpret the value of both a preferred stock and a common stock using the dividend discount model (DDM).

Value of perpetual preferred stock = Dividend / Investor's required rate of return
$7/ 0.11 = $63.64. The stock is overvalued by $75.00 – 63.64 = $11.36.

89. An equity analyst working for a growth oriented mutual fund has a tendency to misvalue the stocks of popular companies that she has previously recommended and the fund already owns. Her behavior is *most likely* consistent with which of the following biases?

A. Escalation bias
B. Prospect theory
C. Confirmation bias

Answer: C

"Efficient Capital Markets," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 89-90
Study Session 13-54-d
Define behavioral finance and describe prospect theory, over-confidence bias, confirmation bias, and escalation bias.

Confirmation bias refers to the bias of looking for information that supports prior opinions and decisions, which leads to a tendency to misvalue the stocks of generally popular companies.

90. A company earned $3 a share last year and just paid a dividend of $2 a share. The company's dividends are expected to grow by 8 percent annually for the next two years. An investor with an 11 percent required rate of return expects to sell the stock at $75 two years from now. The maximum amount the investor should be willing to pay for this company's stock (in $) today is *closest* to:

A. 58.68.
B. 64.71.
C. 66.63.

Answer: B

"An Introduction to Security Valuation," Frank K. Reilly, CFA and Keith C. Brown, CFA
2010 Modular Level I, Vol. 5, pp. 138-141
Study Session 14-56-c
Calculate and interpret the value of both a preferred stock, and a common stock, using the dividend discount model (DDM).

$V = D_1 / (1 + k) + D_2 / (1 + k)^2 + SP_2 / (1 + k)^2$
The value of the stock:

$$\frac{2(\$1.08)}{(1.11)} + \frac{2(\$1.08)^2}{(1.11)^2} + \frac{\$75}{(1.11)^2} = \$64.71$$

Questions 91 through 96 relate to Derivative Investments.

91. When the underlying stock price is $95, an investor pays $2 for a call option with an exercise price of $95. If the stock price moves to $96, the intrinsic value of the call option would be *closest* to:

    A. -$1.
    B. $0.
    C. $1.

    Answer: C

    "Option Markets and Contracts", Don M. Chance
    2010 Modular Level I, Vol. 6, pp. 98-101
    Study Session 17-70-g
    Define intrinsic value and time value and explain their relationship.

    The intrinsic value of a call option is the stock price less the strike price if that difference is positive, and zero otherwise. The stock trading at $96 can be purchased for $95, so the intrinsic value is $1.

92. Margin in the futures market is *most* accurately described as a:

    A. loan to the futures trader.
    B. requirement set by federal regulators.
    C. down payment from the futures trader.

    Answer: C

    "Futures Markets and Contracts," Don M. Chance
    2010 Modular Level I, Vol. 6, pp. 55-58
    Study Session 17-69-c
    Differentiate between margin in the securities markets and margin in the futures markets and explain the role of initial margin, maintenance margin, variation margin, and settlement in futures trading.

    It is the amount of money that must be deposited into an account by a party opening a futures position; the money helps ensure that the party fulfills his/her obligation.

93. A derivative is *most* accurately defined as a financial instrument that provides:

A. a return based on the return of another asset.
B. an adjustment to another asset's level of risk.
C. an agreement between two parties to provide something for each other.

Answer: B

"Derivative Markets and Instruments," Don M. Chance
2010 Modular Level I, Vol. 6, pp. 5-6
Study Session 17-67-a
Define a derivative and differentiate between exchange-traded and over-the-counter derivatives.

This is the definition directly out of the readings. Its return is derived from another underlying asset.

94. An investor enters into a 1 X 3 forward rate agreement (FRA) at a LIBOR rate of 1.5 percent. At expiration, the 60-day LIBOR rate is 1.7 percent and the 90-day LIBOR rate is 1.6 percent. Assuming the contract covers a $1 million notional principal, what payment will the investor *most likely* receive?

A. $249.00
B. $332.39
C. $333.33

Answer: B

"Forward Markets and Contracts", Don M. Chance
2010 Modular Level I, Vol. 6, pp. 40-43
Study Session 17-68-g
Calculate and interpret the payoff of an FRA, and explain each of the component terms.

B is correct because $1 million [(.017-.015)(60/360)/1+.017(60/360)] = $332.39. $\$1{,}000{,}000 \times \left[\frac{(0.017-0.015)\left({}^{60}/_{360}\right)}{1+0.017\left({}^{60}/_{360}\right)}\right] = \$332.$A is incorrect because it uses a 90-day term: $1 million [(.016-.015)(90/360)/1+.016(90/360)] = $249.00

C is incorrect because it ignores TVM = $1 million (.017-.015)(60/360) = $333.33

95. In comparison to a forward contract, a futures contract is *most likely* to be **less**:

A. liquid.
B. publicized.
C. customized.

Answer: C

“Futures Markets and Contracts”, Don M. Chance
2010 Modular Level I, Vol. 6, pp. 51-53
Study Session 17-69-b
Distinguish between futures contracts and forward contracts.

The terms of a forward contract are customized to meet the needs of both parties. A futures contract is not customized rather, the exchange establishes the terms.

96. In what way is the payoff of a forward rate agreement (FRA) *most likely* different from the payoff of an interest rate option?

A. It is based on a fixed exercise rate.
B. It is based on a notional principal amount.
C. It is paid immediately when the contract expires.

Answer: C

“Option Markets and Contracts”, Don M. Chance
2010 Modular Level I, Vol. 6, pp. 92-95
Study Session 17-70-d
Compare and contrast interest rate options with forward rate agreements (FRAs).

The payoff of a FRA is paid immediately when the contract expires. If at expiration the option is in-the-money and exercised, the payoff of an option is not paid immediately at expiration; it is paid at the end of the term of the underlying interest rate.

Questions 97 through 108 relate to Fixed Income Investments.

97. An analyst determines that a 5.50 percent coupon option-free bond, maturing in 7 years, would experience a 3 percent decrease in price if market interest rates rise by 50 basis points. If market interest rates instead fall by 50 basis points, the bond's price would increase by:

    A. exactly 3%.
    B. less than 3%.
    C. more than 3%.

    Answer: C

    "Introduction to the Measurement of Interest Rate Risk," Frank J. Fabozzi
    2010 Modular Level I, Vol. 5, pp. 524-528
    Study Session 16-66-b
    Demonstrate the price volatility characteristics for option-free, callable, prepayable, and putable bonds when interest rates change.

    The bond is option-free and will therefore exhibit positive convexity. An equal change in rates will produce a greater percentage gain when rates decrease than the percentage loss produced when rates increase.

98. Holding all other factors constant, an increase in expected yield volatility will cause the price of a:

    A. putable bond to increase.
    B. callable bond to increase.
    C. putable bond to decrease.

    Answer: A

    "Risks Associated with Investing in Bonds," Frank J. Fabozzi
    2010 Modular Level I, Vol. 5, p. 284
    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.

    Increasing yield volatility increases the value of both put options and call options, which increases the value of a putable bond (which is long the put option) but decreases the value of a callable bond (which is short the call option.)

99. The table below summarizes the yields and corresponding prices for a hypothetical 15-year option-free bond that is initially priced to yield 7%:

Yield(%)	Price($)
6.90	100.9254
7.00	100.0000
7.10	99.0861

Using a 10 basis point rate shock, the duration for this bond is *closest* to:

A. 4.6 years.
B. 7.5 years.
C. 9.2 years.

Answer: C

"Introduction to the Measurement of Interest Rate Risk," Frank J. Fabozzi
2010 Modular Level I, Vol. 5, pp. 532-533
Study Session 16-66-d
Compute and interpret the effective duration of a bond, given information about how the bond's price will increase and decrease for given changes in interest rates, and compute the approximate percentage price change for a bond, given the bond's effective duration and a specified change in yield.

$$\text{Effective duration} = \frac{100.9254 - 99.0861}{2(100)(0.001)} = 9.2 \, years$$

100. According to the market segmentation theory, an upward sloping yield curve is *most likely* due to:

A. investor expectations that short-term interest rates will fall in the future.
B. different levels of supply and demand for short-term and long-term funds.
C. an increasing yield premium required by investors for bearing interest rate risk.

Answer: B

"Understanding Yield Spreads," Frank J. Fabozzi
2010 Modular Level I, Vol. 5, p. 367
Study Session 15-63-c
Explain the basic theories of the term structure of interest rates and describe the implications of each theory for the shape of the yield curve.

The market segmentation theory asserts that the supply and demand for funds determine the interest rates for each maturity sector.

101. An 8 percent coupon bond with a par value of $100 matures in 2 years and is selling at $98.24 to yield 9 percent. Exactly one year ago this bond sold at a price of $95.03 to yield 10 percent. The bond pays annual interest. The change in price attributable to the change in maturity is *closest* to:

A. $1.50.
B. $3.21.
C. $4.97.

Answer: A

"Introduction to the Valuation of Debt Securities," Frank J. Fabozzi
2010 Modular Level I, Vol. 5, pp. 404-406.
Study Session 16-64-c, d
Compute the value of a bond and the change in value that is attributable to a change in the discount rate;
Explain how the price of a bond changes as the bond approaches its maturity date, and compute the change in value that is attributable to the passage of time.

The price of the bond one year ago was $95.03 to yield 10%.
If the yield stays at 10%, the price of the bond today is:

$$\frac{8}{1.10^1} + \frac{108}{1.10^2} = 96.53$$

The change in price attributable to moving to maturity = $96.53 – $95.03 = $1.50.

102. A fixed income portfolio manager owns a $5 million par value non-callable bond. The bond's duration is 5.6 and the current market value is $5,125,000. The dollar duration of the bond is *closest* to:

A. $280,000.
B. $287,000.
C. $700,000.

Answer: B

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2010 Modular Level I, Vol. 5, p. 271
Study Session 15-61-f
Compute and interpret the duration and dollar duration of a bond.

A bond's dollar duration is the expected price change given a 100 basis point change in yield. In this case, dollar duration = 5.6 × 0.01 × $5,125,000 = $287,000.

103. Two amortizing bonds have the same maturity date and same yield to maturity. The reinvestment risk for an investor holding the bonds to maturity is *greatest* for the bond that is:

A. a zero-coupon bond.
B. a coupon bond selling at a discount to par.
C. a coupon bond selling at a premium to par value.

Answer: C

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2010 Modular Level I, Vol. 5, pp. 276-277
Study Session 15-61-i
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.

Because they have the same yield to maturity, we know that the bond selling for a premium has the higher coupon rate. Reinvestment risk refers to the risk that interest rates will decline causing the future income expected from reinvesting coupon payments to decline. The more coupon interest being paid, the greater the reinvestment risk.

104. If investors expect stable rates of inflation in the future, the pure expectations theory suggests that the yield curve is currently:

A. flat.
B. inverted.
C. upward-sloping.

Answer: A

"Understanding Yield Spreads," Frank J. Fabozzi
2010 Modular Level I, Vol. 5, pp. 365-366
Study Session 15-63-c
Explain the basic theories of the term structure of interest rates and describe the implications of each theory for the shape of the yield curve.

The pure expectations theory explains the term structure in terms of expected future short-term interest rates. Assuming that interest rates reflect a relatively stable real rate of interest plus a premium for expected inflation, stability in inflation expectations would mean unchanged future short-term interest rates and a flat yield curve.

105. A portfolio of option-free bonds is *least likely* to be exposed to:

A. volatility risk.
B. yield curve risk.
C. reinvestment risk.

Answer: A

"Risks Associated with Investing in Bonds," Frank J. Fabozzi
2010 Modular Level I, Vol. 5, p. 271-277,
Study Session 15-61-a
Explain the risks associated with investing in bonds.

Volatility risk is the risk that the price of a bond with an embedded option will decline when expected yield volatility changes. By definition, option-free bonds are not affected by volatility risk.

106. An investor purchases a 5 percent coupon bond maturing in 3 years for $102.80, providing a yield-to-maturity of 4 percent. At what rate must the coupon payments be reinvested to generate the 4 percent yield?

A. 0%
B. 4%
C. 5%

Answer: B

"Yield Measures, Spot Rates, and Forward Rates", Frank J. Fabozzi, CFA
2010 Modular Level I, Vol. 5, pp. 451
Study Session 16-65-b
Compute and interpret the traditional yield measures for fixed-rate bonds and explain their limitations and assumptions.

B is correct since the yield-to-maturity measure assumes that the coupon payments can be reinvested at an interest rate equal to the yield-to-maturity, in this case 4%.

107. The yield of a U.S. bond issue quoted on a bond-equivalent basis is 6.8 percent. The yield-to-maturity on an annual-pay basis is *closest* to:

A. 6.69%.
B. 6.92%
C. 14.06%.

Answer: B

"Yield Measures, Spot Rates, and Forward Rates", Frank J. Fabozzi, CFA
2010 Modular Level I, Vol. 5, pp. 457
Study Session 16-65-d
Compute and interpret the bond equivalent yield of an annual-pay bond, and the annual-pay yield of a semiannual-pay bond.

B is correct because the yield on an annual-pay basis is calculated as:
$[(1.034)^2 - 1] = 6.92\%$
The yield on an annual-pay basis is always greater than the yield on a bond-equivalent basis because of compounding.

108. Given the data in the table below, the price of a 3% coupon corporate bond maturing in 2 years is closest to:

Period	Years to Maturity	Spot Rate (%)	Corporate Spread (%)
1	0.5	3.00	0.50
2	1.0	3.30	0.50
3	1.5	3.50	0.50
4	2.0	4.00	0.50

A. $97.19.
B. $98.12.
C. $100.04.

Answer: A

"Yield Measures, Spot Rates, and Forward Rates," Frank J. Fabozzi, CFA
2010 Modular Level I, Vol. 5, pp. 468473
Study Session 16-65-e
Describe the methodology for computing the theoretical Treasury spot rate curve and compute the value of a bond using spot rates.

A is correct because the cash flows should be discounted using the appropriate spot rate plus spread :

$$= \frac{\text{Cash Flow 1}}{(1+z_1)^1} + \frac{\text{Cash Flow 1}}{(1+z_2)^2} + \frac{\text{Cash Flow 1}}{(1+z_3)^3} + \frac{\text{Cash Flow 1}}{(1+z_{1^4})^4}$$

$$= \frac{1.50}{(1.0175)^1} + \frac{1.50}{(1.019)^2} + \frac{1.50}{(1.02)^3} + \frac{101.50}{(1.0225)^4}$$
$$= 1.474 + 1.445 + 1.413 + 92.857 = 97.19$$

Questions 109 through 114 relate to Alternative Investments.

109. A variation of which real estate valuation approach is *most likely* to use slope coefficients derived from a statistical analysis to estimate the value of a property?

A. Cost approach.
B. Income approach.
C. Sales comparison approach.

Answer: C

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2010 Modular Level I, Vol. 6, pp. 202-206
Study Session 18-73-e
Describe the various approaches to the valuation of real estate.

One variation of the sales comparison approach (hedonic price estimation) uses recent transactions in the area to derive an equation that weights various property attributes to determine a value for the property.

110. An investor has gathered the following data, presented on an annual basis, for an apartment complex that is being considered for purchase:

Potential income (net of vacancy and collection losses)	$180,000
Insurance and taxes	$15,000
Utilities	$10,000
Repairs and maintenance	$18,000
Depreciation	$21,000
Interest on proposed financing	$16,000

The annual net operating income (NOI) for the apartment complex is *closest* to:

A. $116,000.
B. $121,000.
C. $137,000.

Answer: C

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2010 Modular Level I, Vol. 6, pp. 205-207
Study Session 18-73-f

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

NOI = $180,000 - $15,000 - $10,000 - $18,000 = $137,000.

111. 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
2010 Modular Level I, Volume 6, pp. 228-229
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 data base.

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 reducing the correlations of returns with conventional equity and fixed income returns.

112. When the spot price of a commodity is above the futures price, the commodity market is said to be in:

A. contango.
B. full carry.
C. backwardation.

Answer: C

“Investing in Commodities,” Ronald G. Layard-Liesching
2010 Modular Level I, Vol. 6, pp. 266-267
Study Session 18-74-a
Explain the relationship between spot prices and expected future prices in terms of contango and backwardation.

C is correct because when a commodity market is in backwardation, the futures prices is below the spot price as market participants believe the spot price will be lower in the future. When spot prices are below the futures price, the market is said to be in contango.

113. When investing in commodities through a collateralized commodity futures position, the return associated with rolling forward the maturity of a futures contract is referred to as the:

A. collateral yield.
B. spot price return.
C. convenience yield.

Answer: C

"Investing in Commodities," Ronald G. Layard-Liesching
2010 Modular Level I, Vol. 6, pp. 268-269
Study Session 18-74-b
Describe the sources of return and risk for a commodity investment and the effect on a portfolio of adding an allocation to commodities.

C is correct because the roll or convenience yield is the return from rolling forward the maturity of the derivatives position. The roll yield can be either negative or positive.

114. A typical hedge fund fee structure is *least likely* to include a:

A. base fee.
B. high water mark.
C. negative incentive fee.

Answer: C

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2010 Modular Level I, Vol. 6, pp. 220-221
Study Session 18-73-i
Define hedge fund in terms of objectives, legal structure, and fee structure, and describe the various classifications of hedge fund.

C is correct because the fee structure can include a base fee and "high water mark" but not a negative performance fee. The lowest performance fee would be zero.

Questions 115 through 120 relate to Portfolio Management.

115. Factors such as fluctuations in interest rates and changes in industrial production contribute to:

A. systematic risk.
B. unsystematic risk.
C. both systematic and unsystematic risk.

Answer: A

"An Introduction to Asset Pricing Models," Frank K. Reilly and Keith C. Brown
2010 Modular Level I, Vol. 4, pp. 273-275
Study Session 12-51-c
Define systematic and unsystematic risk and explain why an investor should not expect to receive additional return for assuming unsystematic risk.

A is correct. Systematic (market-related) risk is caused by macroeconomic variables such as interest rate volatility and variability in industrial production. Unsystematic risk is caused by company-specific attributes.

116. When assessing the performance of a single investment fund, the asset allocation decision explains:

A. a little less than 100% of the level of a fund's returns.
B. about 90% of the fund's variation in returns across time.
C. an average of 40% of the variation in returns of a fund across time.

Answer: B

"The Asset Allocation Decision", Frank K. Reilly and Keith C. Brown
2010 Modular Level I, Vol. 4, pp. 230-232
Study Session 12-49-e
Describe the importance of asset allocation, in terms of 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.

B is correct. Studies have shown that for a single fund, the asset allocation decision explains about 90% of the fund's variation in returns across time and more than 100% of the level of return. Across all funds asset allocation explains an average of 40% of the variation in fund returns.

117. According to the Capital Asset Pricing Model (CAPM) if investors borrow at a rate that exceeds the risk-free lending rate the resulting borrowing portfolios will:

A. plot on a flatter line.
B. plot on a steeper line.
C. no longer plot on a straight line.

Answer: A

"An Introduction to Asset Pricing Models," Frank K. Reilly and Keith C. Brown
2010 Modular Level I, Vol. 4, pp. 285-286
Study Session 12-51-d
Explain the capital asset pricing model, including the security market line (SML) and beta and describe the effects of relaxing its underlying assumptions.

A is correct. If investors borrow at a rate that exceeds the lending rate, the resulting borrowing portfolios will not be as profitable as the case where borrowing and lending is carried out at the same risk-free rate. The result is that borrowing portfolios will plot on a line with a flatter slope compared to borrowing portfolios constructed from borrowing at the risk-free lending rate.

118. Which of the following is **not** an assumption of the Markowitz model? Investors:

A. have homogeneous expectations.
B. maximize one-period expected utility.
C. base decisions solely on expected return and risk.

Answer: A

"An Introduction to Portfolio Management," Frank K. Reilly and Keith C. Brown
2010 Modular Level I, Vol. 4, p.241
Study Session 12-50-b
List the assumptions about investor behavior underlying the Markowitz model.

A is correct. This is not an assumption of the Markowitz model, it is an assumption of the Capital Asset Pricing Model (CAPM).

119. The table below provides a probability distribution of stock returns for shares of Orion Corporation:

Probability	**Rate of Return (%)**
0.15	-12
0.60	11
0.25	18

The variance of returns for Orion Corporation stock is *closest* to:

A. 44.36
B. 50.94
C. 88.71

Answer: C

“An Introduction to Portfolio Management,” Frank K. Reilly and Keith C. Brown
2010 Modular Level I, Vol. 4, pp.242-244
Study Session 12-50-c
Compute and interpret the expected return, variance, and standard deviation for an individual investment and the expected return and standard deviation for a portfolio.

C is correct. The table below provides the calculation of the variance

Probability (Pi)	**Rate of Return (%)**	**Pi x R**	**R - E(R)**	**(R - E(R))^2**	**Pi(R-E(R))^2**
0.15	-12	-1.8	-21.3	453.69	68.0535
0.6	11	6.6	1.7	2.89	1.734
0.25	18	4.5	8.7	75.69	18.9225
		9.3			88.71

Expected return E(R) = 9.3%
Variance of returns = 88.71

120. For a retired 65-year-old investor, with moderate risk tolerance and adequate insurance and cash reserves, the appropriate portfolio will *most likely* have the following mix of bonds and stocks:

	Bonds	**Stocks**
A	55-65%	35-45%
B	30-40%	60-70%
C	15-50%	50-85%

Answer: A

"The Asset Allocation Decision", Frank K. Reilly and Keith C. Brown.
2010 Modular Level I, Vol. 4, p. 222
Study Session 12-49-c, d
Describe the return objectives of capital preservation, capital appreciation, current income, and total return.
Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique needs and preferences.

A is correct. A moderately risk tolerant retired 65-year-old can structure his or her portfolio so that it provides income and some principal growth. The principal growth is needed because the time horizon is still fairly long. Such a portfolio could have an allocation of 55-65% in bonds and 35-45% in stocks.