2019 Level I Mock Exam PM

The afternoon session of the 2019 Level I Chartered Financial Analyst® Mock Examination has 120 questions. To best simulate the exam day experience, candidates are advised to allocate an average of one and a half minutes per question for a total of 180 minutes (3 hours) for this session of the exam.

Questions	Topic	Minutes
1–19	Ethical and Professional Standards	28.5
20–31	Quant	18
32–43	Econ	18
44–61	Financial Reporting and Analysis	27
62–73	Corporate Finance	18
74–80	Portfolio Management	10.5
81–93	Equity	19.5
94–106	Fixed Income	19.5
107–113	Derivatives	10.5
114–120	Alternative Investments	10.5
	Total:	**180**

2019 LEVEL I MOCK EXAM PM

1 Which of the following *least likely* forms the basic structure for enforcement of the CFA Institute Professional Conduct Program?

A Bylaws

B Rules of Procedure

C Board of Governors

C is correct. Although the Board of Governors maintains oversight and responsibility for the Professional Conduct Program, the CFA Institute Bylaws and Rules of Procedure form the basic structure for enforcement of the Code and Standards.

A is incorrect because although the Board of Governors maintains oversight and responsibility for the Professional Conduct Program the CFA Institute Bylaws and Rules of Procedure form the basic structure for enforcement of the Code and Standards.

B is incorrect because although the Board of Governors maintains oversight and responsibility for the Professional Conduct Program the CFA Institute Bylaws and Rules of Procedure form the basic structure for enforcement of the Code and Standards.

Code of Ethics and Standards of Professional Conduct
LOS a

2 Ross Nelson, CFA, manages accounts for high-net-worth clients including his own family's account. He has no beneficial ownership in his family's account. Because Nelson is concerned about the appearance of improper behavior in managing his family's account, when his firm purchases a block of securities, Nelson allocates to his family's account only those shares that remain after his other client accounts have their orders filled. The fee for managing his family's account is based on his firm's normal fee structure. According to the *Standards of Practice Handbook*, Nelson's best course of action with regard to management of his family's account would be to:

A treat the account like other client accounts.

B treat the account like other employee accounts of the firm.

C remove himself from any direct involvement by transferring responsibility for this account to another investment professional in the firm.

A is correct as Nelson has breached his duty to his family by treating them differently from other clients. They are entitled to the same treatment as any other client of the firm. Nelson should treat his family's account like any other client account [Standard III(B) related to fair dealing and Standard VI(B) related to Priority of Transactions].

B is incorrect as this action is not necessary.

C is incorrect as this action is not necessary.

Guidance for Standards I–VII
LOS a
Standard III(B)–Fair Dealing, Standard VI(B)–Priority of Transactions

3 Several years ago, Leo Peek, CFA, co-founded an investment club. The club is fully invested but has not actively traded its account for at least a year and does not plan to resume active trading of the account. Peek's employer requires an annual disclosure of employee stock ownership. Peek discloses all of his personal trading accounts, but does not disclose his holdings in the investment club. Peek's actions are *least likely* to be a violation of which of the CFA Institute Standards of Professional Conduct?

A Misrepresentation

B Transaction priority

C Conflicts of interest

B is correct as there is no indication that the investment club is trading ahead of clients [Standard VI(B)].

A is incorrect as information concerning the investment has been misrepresented due to the lack of disclosure [Standard I(C)].

C is incorrect as members should disclose all beneficial ownership that could reasonably cause a conflict of interest. Additionally, because Peek's employer requires the disclosure, a failure to provide full information would violate his employer's policies and CFA Institute Standards of Professional Conduct [Standard VI(A)].

Guidance for Standards I–VII
LOS a
Standard I(C)–Misrepresentation, Standard VI(A)–Disclosure of Conflicts, Standard VI(B)–Priority of Transactions

4 Madeline Smith, CFA, was recently promoted to senior portfolio manager. In her new position, Smith is required to supervise three portfolio managers. Smith asks for a copy of her firm's written supervisory policies and procedures, but is advised that no such policies are required by regulatory standards in the country where Smith works. According to the *Standards of Practice Handbook*, Smith's *most* appropriate course of action would be to:

A require her firm to adopt the CFA Institute Code of Ethics and Standards of Professional Conduct.

B require the employees she supervises to adopt the CFA Institute Code of Ethics and Standards of Professional Conduct.

C decline to accept supervisory responsibility until her firm adopts procedures to allow her to adequately exercise such responsibility.

C is correct because if a member cannot fulfill supervisory responsibilities because of the absence of a compliance system or because of an inadequate compliance system, the member should decline in writing to accept supervisory responsibility until the firm adopts reasonable procedures to allow the member to adequately exercise such responsibility [Standard IV(C)].

A is incorrect because these actions will not provide a complete compliance system with which the portfolio manager can adequately exercise her supervisory responsibilities.

B is incorrect because these actions will not provide a complete compliance system with which the portfolio manager can adequately exercise her supervisory responsibilities.

Guidance for Standards I–VII
LOS a
Standard IV(C)–Responsibilities of Supervisors

5 Marc Davidson, CFA, works as a trust specialist for Integrity Financial. On his own time, Davidson starts a part time consulting business providing advice to Trustees for a fee. He conducts this business on his own time. Davidson asks his assistant to compile a list of Integrity's clients and their contact information. The following month, Davidson is offered a similar role at Integrity's largest competitor, Legacy Trust Services, Inc. After he begins working at Legacy, his new manager arranges for him to meet with a number of prospective clients, many of whom are clients of Integrity. After meeting with Davidson, a number of former Integrity clients decide to transfer their business to Legacy. Did Davidson's action violate the Code and Standards?

A No.

B Yes, Davidson's part time consulting business is a violation of the Standards.

C Yes, both Davidson's part time consulting business and his meetings with Integrity clients are a violation of the Standards.

B is correct because members and candidates are required to disclose any compensation arrangement to their employers that involves performing tasks or services that their employers can charge for. Disclosure is required even if the activities occur during non-work hours.

C is incorrect because being hired by a competing firm does not constitute a violation of Standard IV(A). In addition, Davidson is not utilizing confidential information from Integrity to solicit former clients. Although Davidson had a list of client contacts prepared while at Integrity, his new employer arranges the meetings.

A is incorrect because his consulting business is a violation of Standard IV(A).

Guidance for Standards I–VII
LOS b
Standard IV(A)–Loyalty

6 Lee Chu, a CFA candidate, develops a new quantitative security selection model exclusively through back-testing on the Chinese equity market. Chu is asked to review marketing materials including an overview of the conceptual framework for his model, providing back-tested performance results, and listing the top holdings. Chu directs the marketing group to remove the description of his model due to concerns competitors may attempt to replicate his investment philosophy. He also instructs the marketing group to remove the list of the top holdings because it shows that the top holding represents 30 percent of the back-tested model. Which of the following actions is *least likely* to result in a violation of the Code and Standards? Chu's:

A use of back-tested results in communication with prospective clients.

B failure to adequately describe the investment process to prospective clients.

C failure to disclose that the top holding represents such a large allocation in the model.

A is correct because use of back-tested results is not prohibited, providing it is appropriately disclosed.

B in incorrect because under Standard V(B) members and candidates must adequately describe to clients and prospective clients the manner in which the member or candidate conducts the investment decision making process.

C is incorrect because Chu is intentionally omitting a material fact regarding the concentration of the model portfolio which would likely have an impact on the prospective client's perception of the riskiness of this strategy.

Guidance for Standards I–VII
LOS b
Standard V(B)–Communication with Clients and Prospective Clients

7 Bob White is a new CFA charterholder and he is updating his resume and company biography (bio) to reflect this accomplishment. In his bio, he states that he successfully passed all three CFA exams in three consecutive years. On his resume he adds the following line: "CFA, 2013, CFA Society of Pittsburgh". Are either his bio or his resume in violation of the Standards regarding referencing the CFA designation and program?

A No.

B Yes, his resume is incorrect.

C Yes, both his bio and his resume are in violation of the Standards.

B is correct because his resume should read CFA, 2013, CFA Institute. The resume is incorrect because it lists the CFA Society of Pittsburgh instead of the CFA Institute as the organization associated with the CFA designation.

A is incorrect because his resume is wrong.

C is incorrect because stating that he passed the three exams in three years is simply a statement of fact (assuming it is true) and permissible.

Guidance for Standards I–VII
LOS b
Standard VII(B)–Reference to CFA Institute, the CFA Designation, and the CFA Program

8 Kim Klausner, CFA, monitors several hundred employees as head of compliance for a large investment advisory firm. Klausner has always ensured that his company's compliance program met or exceeded those of its competitors. Klausner, who is going on a long vacation, has delegated his supervisory responsibilities to Sue Chang. Klausner informs Chang that her responsibilities include detecting and preventing violations of any capital market rules and regulations, and the CFA Institute Code and Standards. Klausner *least likely* violated the CFA Institute Standards of Professional Conduct by failing to instruct Chang to also consider:

A firm policies.

B legal restrictions.

C industry standards.

C is correct because the requirement under Standard IV(C)–Responsibilities of Supervisors does not include any reference to industry standards. Standard IV(C) requires supervisors to instruct those subordinate to whom supervision is delegated about detection methods to prevent violations of laws, rules, regulations, firm policies, and the CFA Institute Code and Standards.

A is incorrect because the requirement under Standard IV(C)–Responsibilities of Supervisors includes detection of any violation of firm policies.

B is incorrect because a supervisor's responsibilities under Standard IV(C)–Responsibilities of Supervisors include instructing those subordinates to whom supervision is delegated about methods to prevent and detect violations of laws, rules, regulations, firm policies, and the Code and Standards. Laws would also include legal restrictions.

Guidance for Standards I–VII
LOS b

9 On a flight to Europe, Romy Haas, CFA, strikes up a conversation with a fellow passenger, Vincent Trujillo. When Trujillo learns that Haas is in the investment profession, he asks about the CFA designation. Haas tells him the following about the CFA designation:

Statement 1 Individuals who have completed the CFA Program have the right to use the CFA designation.

Statement 2 The CFA designation is globally recognized, which is why I use it as part of my firm's name.

Statement 3 CFA charterholders must satisfy membership requirements to continue using the designation.

In explaining the use of the CFA designation, Haas *least likely* violated the CFA Institute Standards of Professional Conduct concerning which of the following statements?

A Statement 1

B Statement 2

C Statement 3

C is correct because according to Standard VII(B)–Reference to CFA Institute, the CFA Designation, and the CFA Program this is an accurate statement concerning the CFA designation.

A is incorrect because according to Standard VII(B)–Reference to CFA Institute, the CFA Designation, and the CFA Program completion of the CFA Program is not the only requirement for use of the CFA designation as individuals must also have the required years of acceptable work experience.

B incorrect because according to Standard VII(B)–Reference to CFA Institute, the CFA Designation, and the CFA Program the designation must not be used as part of a firm's name.

Guidance for Standards I–VII
LOS b
Standard VII(B)–Reference to CFA Institute, the CFA Designation, and the CFA Program

10 Tonya Tucker, CFA, is a financial analyst at Bowron Consolidated. Bowron has numerous subsidiaries and is actively involved in mergers and acquisitions to expand its businesses. Tucker analyzes a number of companies, including Hanchin Corporation. When Tucker speaks with the CEO of Bowron, she indicates that many of the companies she has looked at would be attractive acquisition targets for Bowron. After her discussion with the CEO, Tucker purchases 100,000 shares of Hanchin Corporation at $200 per share. Bowron does not have any pre-clearance procedures, so the next time she meets with the CEO, Tucker mentions she owns shares of Hanchin. The CEO thanks her for this information but does not ask for any details. Two weeks later, Tucker sees a company-wide email from the CEO announcing Bowron's acquisition of Hanchin for $250 a share. With regards to her purchase of Hanchin stock, Tucker *least likely* violated the CFA Institute Standards of Professional Conduct concerning:

A Loyalty.

B Priority of Transactions.

C Material Nonpublic Information.

C is correct because there is no indication the analyst had access to material nonpublic information and was in violation of Standard II(A)–Material Nonpublic Information. Specifically, Tucker did not have information concerning any decision by Bowron to acquire Hanchin stock since she is not a part of the decision-making team at Bowron, which determines the companies it plans to take over. The analyst had indicated numerous companies were viable options for takeover, and she did not single out any one company in particular.

A is incorrect because even though the company does not have a stock pre-clearance procedure, trading the stock of a company the analyst recommended as an acquisition candidate is an act which violates Standard IV(A)–Loyalty, as she did not give her employer the opportunity to take advantage of her skill/recommendation prior to buying the shares for her own portfolio.

B is incorrect because there has been a violation of Standard VI(B)–Priority of Transactions, which requires that investment transactions for clients and employers must have priority over investment transactions in which a Member or Candidate is the beneficial owner despite the fact that there are no stock pre-clearance procedures at Bowron.

Guidance for Standards I–VII
LOS b
Standard II(A)–Material Nonpublic Information, Standard IV(A)–Loyalty, Standard VI(B)–Priority of Transactions

11 Thomas Turkman recently hired Georgia Viggen, CFA, as a portfolio manager for North South Bank. Although Viggen worked many years for a competitor, West Star Bank, the move was straightforward since she did not have a non-compete agreement with her previous employer. Once Viggen starts working for Turkman, the first thing she does is to bring a trading software package she developed and used at West Star to her new employer. Using public information, Viggen contacts all of her former clients to convince them to move with her to North South. Viggen also convinces one of the analysts she worked with at West Star to join her at her new employer. Viggen *most likely* violated the CFA Institute Code of Ethics and Standards of Professional Conduct concerning her actions involving:

A clients.

B the analyst.

C trading software.

C is correct because the portfolio manager violated Standard IV(A)–Loyalty by taking proprietary trading software from her former employer. Although the manager created the software, it was during a period of time when West Star employed her, so the software is not her property to take with her to her new employer. The member contacted clients using public information, so she did not violate Standard IV(A)–Loyalty. Because Viggen was not obligated to abide by a non-compete agreement that would likely restrict recruitment of former colleagues, Viggen is most likely free to recruit the analyst from his former employer.

A is incorrect because the member did not contact clients using information from her previous employer so she did not violate Standard IV(A)–Loyalty by these actions. Contacting former clients for any reason through the use of client lists or other information taken from a prior employer without permission would be a violation of the standard because client records are the property of the firm.

B is incorrect because West Star does not have any non-compete agreements so the analyst is free to seek employment elsewhere.

Guidance for Standards I–VII
LOS b
Standard IV(A)–Loyalty

12 Margie Germainne, CFA, is a risk management consultant who has been asked by a small investment bank to recommend policies to prevent bank employees from front-running client orders. These clients generally invest in one or more of the bank's large cap equity unit trusts. To ensure compliance with the CFA Institute Standards of Professional Conduct, Germainne should *least likely* recommend which of the following? Employees should be restricted from trading:

A equity related securities.

B without prior permission.

C during established time periods.

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

B is incorrect because requiring staff members to receive prior permission for personal trading (preclearance procedures) is a recommended practice [Standard VI(B)–Priority of Transactions].

C is incorrect because a restricted trading period is a recommended practice [Standard VI(B)–Priority of Transactions].

Guidance for Standards I–VII
LOS c
Standard VI(B)–Priority of Transactions

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

A Fair Dealing

B Communication with Clients

C Diligence and Reasonable Basis

C is correct because the recommendation is based on a reasonable and adequate research process, so the analyst could follow the research team's opinion, as required by Standard V(A)–Diligence and Reasonable Basis.

A is incorrect because the analyst can express her disagreement with the team by documenting her difference of opinion, but Standard III(B)–Fair Dealing requires members and candidates to treat all clients fairly when disseminating investment recommendations or making material changes to prior investment recommendations or when taking investment action. The discussion with institutional clients is inappropriate as the analyst is making selective disclosure. Members and candidates must make every effort to treat all individual and institutional clients in a fair and impartial manner.

B is incorrect because the analyst has not separated fact from opinion as required by Standard V(B)–Communication with Clients and Prospective Clients when she makes a verbal buy recommendation on the auto companies.

Guidance for Standards I–VII
LOS c
Standard III(B)–Fair Dealing, Standard V(A)–Diligence and Reasonable Basis, Standard V(B)–Communication with Clients and Prospective Clients

14 Chris Rodriguez, CFA, is a portfolio manager at Nisqually Asset Management, which specializes in trading highly illiquid shares. Rodriguez has been using Hon Securities Brokers almost exclusively when making transactions for Nisqually clients, as well as for his own relatively small account. Hon always executes Rodriguez's personal trades at a more preferential price than for Rodriguez's client's accounts. This occurs regardless of whether or not Rodriguez personally trades before or after clients. Rodriguez should *least likely* do which of the following in order to comply with the CFA Institute Code of Ethics and Standards of Professional Conduct?

A Eliminate the exclusive trading arrangement.

B Trade client accounts before his own account.

C Average trade prices across all trading accounts.

C is correct because Rodriguez is in violation of Standard IV(A)–Loyalty, which requires, in matters related to their employment, members and candidates to act for the benefit of their employer and not deprive their employer of the advantage of their skills and abilities, divulge confidential information, or otherwise cause harm to their employer. Rodriguez

should not accept the special treatment from Hon, and he should seek such favors for the clients of Nisqually, specifically the lower costs Rodriguez has been getting for his transactions. Rodriguez should not average transaction costs, as his clients should be given the lower preferential prices according to Standard III(A)–Loyalty Prudence and Care.

A is incorrect because Hon is favoring Rodriguez's personal trading account, most likely as an inducement for him to trade client accounts at Hon, which is a violation by Rodriguez of Standard IV(A)–Loyalty, which requires, in matters related to their employment, members and candidates to act for the benefit of their employer and not deprive their employer of the advantage of their skills and abilities, divulge confidential information, or otherwise cause harm to their employer. By trading ahead of clients the member has also violated Standard VI(B)–Priority of Transactions, and changing this procedure is necessary. Investment transactions for clients and employers must have priority over investment transactions in which a member or candidate is the beneficial owner. Front-running transactions is considered unethical behavior because of the importance of the duty of loyalty investment professionals owe to their clients and the fact that this duty is compromised whenever professionals place their personal interests before those of their clients.

B is incorrect because the member has violated Standard VI(B)–Priority of Transactions by trading ahead of clients, and changing this procedure is necessary. Investment transactions for clients and employers must have priority over investment transactions in which a member or candidate is the beneficial owner. Front-running transactions is considered unethical behavior because of the importance of the duty of loyalty investment professionals owe to their clients and the fact that this duty is compromised whenever professionals place their personal interests before those of their clients.

Guidance for Standards I–VII
LOS c
Standard IV(A)–Loyalty, Standard VI(B)–Priority of Transactions

15 Which of the following statements related to why the GIPS standards were created is *least likely* correct? GIPS standards were created to:

A provide clients certainty in what is presented and allow them to make reasonable comparisons.

B identify a set of ethical principles for firms to follow in calculating and presenting historical investment results.

C establish a standardized, industry wide approach for investment firms to follow.

A is correct. The GIPS standards were created to ensure fair representation and full disclosure of investment performance, not to provide certainty in what is presented.

B is incorrect because this is a correct statement as to why the GIPS standards were created.

C is incorrect because this is a correct statement as to why the GIPS standards were created.

Introduction to the Global Investment Performance Standards (GIPS)
LOS a

16 Which of the following statements concerning the Global Investment Performance Standards (GIPS) is *most likely* correct?

A Clients or prospective clients benefit from the Standards because the historical track record of compliant firms is accurate and precise.

B The Standards eliminate the need for in-depth due diligence by investors.

C Compliance with the Standards enhances the credibility of investment management firms.

C is correct. Compliance with the GIPS standards enhances the credibility of investment management firms.

A is incorrect. The GIPS standards do not ensure that the historical track record of compliant firms is accurate and precise, only that the record is complete and fairly presented.

B is incorrect because the Standards do not eliminate the need for in-depth due diligence by investors.

Introduction to the Global Investment Performance Standards (GIPS)
LOS a

17 Which of the following statements does not accurately represent the GIPS standards concerning the fundamentals of compliance? GIPS standards:

A promote fair competition amongst investment management firms in all markets requiring a common fee structure.

B ensure consistent, accurate investment performance data in areas of reporting, records, marketing, and presentations.

C obtaining global acceptance of calculation and presentation standards in a fair, comparable format with full disclosure.

A is correct. The GIPS standards do not promote fair competition among investment management firms in all markets by requiring a common fee structure.

B is incorrect. Ensuring consistent, accurate investment performance data in areas of reporting, records, marketing, and presentations accurately represents the GIPS standards concerning the fundamentals of compliance.

C is incorrect. Obtaining global acceptance of calculation and presentation standards in a fair, comparable format with full disclosure accurately represents the GIPS standards concerning the fundamentals of compliance

The GIPS Standards
LOS a

18 The belief that one's ethical standards are above average is *most likely* a reflection of which of the following behavioral biases?

A Overconfidence

B Short-term focus

C Situational influence

A is correct. The belief that one's ethical standards are above average illustrates an overconfidence bias. An overconfidence bias will most likely lead individuals to overestimate the morality of their own behavior and can lead to a failure to consider important inputs and variables needed to make the best ethical decisions.

B is incorrect. A short-term focus is an aspect of situation influences. Our brains more easily and quickly identify, recognize and consider short-term situational influences versus longer-term considerations. Long-term considerations have less immediate consequences making them less obvious as factors to consider in a decision and therefore, less likely to influence our overall decision making.

C is incorrect. Situational influences are external factors that shape our thinking, decision making, and behavior. Learning to recognize a situational influence is critical to making good decisions however it is not a behavioral bias.

Ethics and Trust in the Investment Profession
LOS c
Section 4

19 Examples of the beneficial features of using an ethical decision-making framework *least likely* includes analyzing:

A the best course of action when alternatives are available.

B the decision maker's perspective of contemplated actions.

C a broader picture from a long-term point of view.

B is correct. An ethical decision-making framework helps a decision maker see the situation from multiple perspectives, not just from her personal perspective, and pay attention to aspects of the situation that may be less evident if a short-term, self-focused perspective is applied.

A is incorrect because an ethical decision making framework helps a decision-maker see the best course of action when alternatives are available.

C is incorrect because an ethical decision making framework helps a decision-maker see a situation from multiple perspectives and pay attention to aspects of the situation that may be less evident if a short-term, not a long -term, self-focused perspective is applied.

Ethics and Trust in the Investment Profession
LOS f
Section 7

20 An investor wants to maximize the possibility of earning at least 5% on her investments each year.

Portfolio	Expected Return	Standard Deviation	Roy's Safety-First Ratio
1			0.35
2			0.64
3	22%	40%	??

Using Roy's safety-first criterion, the *most* appropriate choice for the investor is portfolio:

A 3.

B 2.

C 1.

B is correct. The portfolio with the highest safety-first ratio (SFRatio) is preferred. The SFRatio is calculated by subtracting the threshold return (R_L) from the expected return [$E(R_P)$] and dividing by the standard deviation (σ_P).

SFRatio = $[E(R_P) - R_L]/\sigma_P$. For the choices given:

	Portfolio 1	Portfolio 2	Portfolio 3
Roy's Safety First Criterion	0.35	**0.64**	0.425 = [(22 – 5)/40]

Portfolio 2 has the highest SFRatio, so it is the most appropriate choice.
C is incorrect because 0.35 is less than 0.64.
A is incorrect because 0.425 is less than 0.64.

Common Probability Distributions
LOS m
Section 3.3

21 Compared with historical simulation, Monte Carlo simulation is *most* appropriate when:

A probability distributions are unavailable.

B "what if" analysis is required.

C analytical methods are required.

B is correct. Monte Carlo simulation lends itself to "what if" analysis and requires the user to provide a probability distribution or distributions. It can be a complement to analytical methods.

A is incorrect. Monte Carlo simulation requires probability distribution

C is incorrect. Monte Carlo simulation can be a complement to analytical methods. Analytical methods provide precise results, whereas Monte Carlo simulation does not.

Common Probability Distributions
LOS q
Section 4

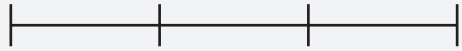
22 An investor purchases one share of stock for $85. Exactly one year later, the company pays a dividend of $2.00 per share. This is followed by two more annual dividends of $2.25 and $2.75 in successive years. Upon receiving the third dividend, the investor sells the share for $100. The money-weighted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

A 7.97%.

B 8.15%.

C 8.63%.

B is correct. The money-weighted rate of return is the internal rate of return (IRR) of the cash flows associated with the investment. The following figure represents the timeline for the problem:



Years:	0	1	2	3
Cash Flows (in $):	(85)	(2.00)	(2.25)	(102.75)

Using the cash flow (CF) function of a financial calculator: $CF_0 = -85$, $CF_1 = 2$, $CF_2 = 2.25$, $CF_3 = 102.75$; and solving for IRR: IRR = 8.15%.

A is incorrect. It adds all three dividends together and (incorrectly) calculates the HPR of the investment as (2 + 2.25 + 102.75)/85 = 1.25882353. Then the third root of this number is taken and 1 is subtracted. The result is 7.97%.

C is incorrect. It is calculated by subtracting 1 from 1.25882353 (see Justification A) and dividing the remainder by 3. The result is 8.63%.

Discounted Cash Flow Applications
Section 3.1
LOS d

23 A one-tailed hypothesis testing has a *p*-value for a test statistic of 3%. An analyst would not reject the null hypothesis at a significance level of:

A 0.01.

B 0.05.

C 0.10.

A is correct. By the definition of *p*-value, 0.03 is the smallest level of significance at which the null hypothesis can be rejected. An analyst cannot reject the null hypothesis at the 0.01 significance level.

B is incorrect. As explained in choice A

C is incorrect. As explained in choice A.

Hypothesis Testing
LOS f
Section 2

24 Event *X* and Event *Y* are independent events. The probability of *X* is 0.2 [*P*(*X*) = 0.2] and the probability of *Y* is 0.5 [*P*(*Y*) = 0.5]. The joint probability of *X* and *Y*, *P*(*XY*), is *closest* to:

A 0.7.

B 0.3.

C 0.1.

C is correct. Given that *X* and *Y* are independent, their joint probability is equal to the product of their individual probabilities. In this case: $P(XY) = P(X)P(Y) = 0.2 \times 0.5 = 0.1$.

A is incorrect; it is the sum of the two individual probabilities (i.e., 0.5 + 0.2 = 0.7).

B is incorrect; it is the difference between the two individual probabilities (i.e., 0.5 – 0.2 = 0.3).

Probability Concepts
LOS f
Section 2

25 An investor in Abco stock forecasts the probability that Abco exceeded, met, or fell short of consensus expectations for free cash flow (FCF) during the prior quarter:

- *P(FCF exceeded consensus)* = 0.50
- *P(FCF met consensus)* = 0.35
- *P(FCF fell short of consensus)* = 0.15

While waiting for Abco to release last quarter's FCF data, the investor learns that Abco will acquire a competitor. Believing that the upcoming acquisition makes it more likely that last quarter's FCF will exceed the consensus, the investor generates a list of FCF events that may have influenced the acquisition:

- *P(Acquisition | FCF exceeded consensus)* = 0.40
- *P(Acquisition | FCF met consensus)* = 0.25
- *P(Acquisition | FCF fell short of consensus)* = 0.35

Using Bayes' Formula, calculate the probability that Abco is likely to exceed consensus FCF expectations for last quarter given the acquisition. *P(FCF exceeded consensus | Acquisition)* is *closest* to:

A 34%.

B 59%.

C 27%.

B is correct. The updated probability *P(FCF exceeded consensus | Acquisition)* is 59%.

1 Calculate the unconditional probability that Abco will acquire the competitor firm:

P(Acquisition) = (0.50 × 0.40) + (0.35 × 0.25) + (0.15 × 0.35) = 0.34, or 34%.

2 Calculate the updated probability that Abco exceeded consensus expectations for FCF given that they acquire the competitor firm: *P(FCF exceeded consensus | Acquisition)* = [*P(Acquisition | FCF exceeded consensus)/P(Acquisition)*] × *P(FCF exceeded consensus)* = (0.40/0.34) × (0.50) = 0.59 or 59%.

A is incorrect because 34% is the unconditional probability that Abco acquires the competitor firm: P(*Abco acquires*) = (0.50 × 0.40) + (0.35 × 0.25) + (0.15 × 0.35) = 0.34, or 34%.

C is incorrect because the updated probability was calculated in error:

$[P(Acquisition \mid FCF\ exceeded\ consensus) \times P(Acquisition)]/P(FCF\ exceeded\ consensus) = (0.40 \times 0.34)/(0.50) = 0.27$ or 27%

Probability Concepts
LOS n
Section 8.2

26 An analyst applies four valuation screens to a set of potential investments. The screens are independent of each other.

Valuation Screen	Probability of Passing
1	0.65
2	0.45
3	0.40
4	0.30

If there are 1,200 potential investments, the number expected to simultaneously pass all four screens is *closest* to:

A 360.

B 97.

C 42.

C is correct. As the screens are independent, the probability of passing all four simultaneously is the product of their respective probabilities:

$$P(ABCD) = P(A)P(B)P(C)P(D)$$

where

$P(A) = 0.65$ and is the probability of passing valuation screen 1
$P(B) = 0.45$ and is the probability of passing valuation screen 2
$P(C) = 0.40$ and is the probability of passing valuation screen 3
$P(D) = 0.30$ and is the probability of passing valuation screen 4

$P(ABCD) = 0.65 \times 0.45 \times 0.40 \times 0.30 = 0.0351.$

Given 1,200 potential investments, approximately $1{,}200 \times 0.0351 = 42.12 \sim$ **42** will pass the screens.

A is incorrect. It uses only the smallest of the given probabilities as in $1{,}200 \times 0.30 = 360$.

B is incorrect. It subtracts the given probabilities from 1.00 and uses the product of these values: $[(1 - 0.65) \times (1 - 0.45) \times (1 - 0.40) \times (1 - 0.30)] \times 1{,}200 = (0.35 \times 0.55 \times 0.60 \times 0.70) \times 1{,}200 = 0.08085 \times 1{,}200 = 97.02 \sim 97$.

Probability Concepts
LOS e, f
Section 2
Financial Statement Analysis: Applications
LOS d
Section 5

27 An analyst gathered the following information about a stock index:

Mean net income for all companies in the index	$2.4 million
Standard deviation of net income for all companies in the index	$3.2 million

If the analyst takes a sample of 36 companies from the index, the standard error of the sample mean is *closest* to:

A $400,000.

B $533,333.

C $88,889.

B is correct. The standard error of the sample mean is equal to the population standard deviation (σ) divided by the square root of the number of observations in the sample (*n*):

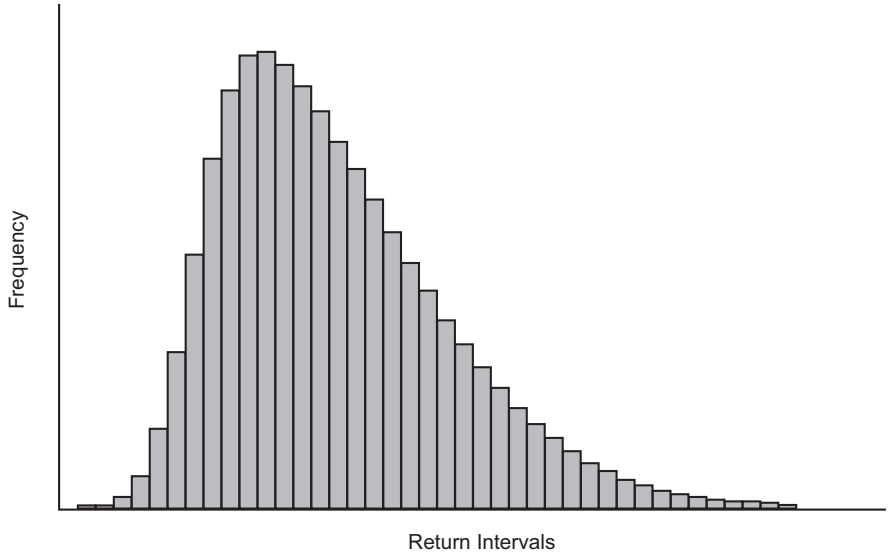
$$\sigma_{\bar{X}} = \sigma/\sqrt{n} = \$3{,}200{,}000/\sqrt{36} = \$533{,}333$$

A is incorrect. It uses the following formula: $\$2{,}400{,}000/\sqrt{36}$ = $400,000.

C is incorrect. It uses the following formula: $3,200,000/36 = $88,889.

Sampling and Estimation
LOS f
Section 3.1

28 The figure below shows the histogram for the distribution of weekly returns on an index.



The median of the returns on the index, if compared to the mean, will *most likely* be:

A smaller.

B equal.

C greater.

A is correct. The histogram clearly shows that the return distribution of the index is positively skewed (skewed to the right) and is unimodal (it has one most frequently occurring value). For a positively skewed unimodal distribution, the median is always less than the mean.

B is incorrect. By looking at the histogram, it is clear that the return distribution of the index is positively skewed (skewed to the right) and is unimodal (it has one most frequently occurring value). For a positively skewed unimodal distribution, the median is always less than the mean.

C is incorrect. By looking at the histogram, it is clear that the return distribution of the index is positively skewed (skewed to the right) and is unimodal (it has one most frequently occurring value). For a positively skewed unimodal distribution, the median is always less than the mean.

Statistical Concepts and Market Returns
LOS d, j, k
Sections 4.1, 5.3, 8

29 A technical analyst observes a head and shoulders pattern in a stock she has been following. She notes the following information:

Head price	$83.50
Shoulder price	$72.00
Neckline price	$65.75
Current price	$64.00

Based on this information, her estimate of the price target is *closest* to:

A $59.50.

B $48.00.

C $44.50.

B is correct. Price target = Neckline – (Head – Neckline). In this example, Price target = $65.75 – ($83.50 – $65.75) = $65.75 – $17.75 = $48.00.

A is incorrect because 59.50 = Neckline – (Shoulder – Neckline) = 65.75 – (72 – 65.75).

C is incorrect because 44.50 = Current Price – (Head – Current Price) = 64 – (83.50 – 64).

Technical Analysis
LOS d
Section 3.3.1.3

30 The minimum rate of return an investor must receive in order to accept an investment is *best* described as the:

A internal rate of return.

B required rate of return.

C expected return.

B is correct. The required rate of return is the minimum rate of return an investor must receive in order to accept an investment.

A is incorrect. The required rate of return is the minimum rate of return an investor must receive in order to accept an investment. The internal rate of return is the discount rate that makes net present value equal to zero

C is incorrect. The required rate of return is the minimum rate of return an investor must receive in order to accept an investment. The expected return is based on the expected value of a random variable and is not the minimum rate of return an investor must receive in order to accept an investment (i.e., the expected return could also be negative).

The Time Value of Money
LOS a
Section 2

31 A borrower is considering three competing mortgage loan offers from her bank. The amount borrowed on the mortgage is $100,000 with monthly compounding.

Mortgage Type	Stated Annual Interest Rate at Initiation of the Loan	Year in Which Rate First Adjusts
30-year fixed rate	5.000%	N/A
20-year fixed rate	4.385%	N/A
30-year adjustable-rate mortgage (ARM)	3.750%	3

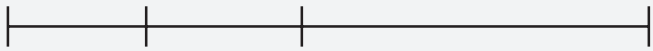
The rate on the ARM resets at the end of Year 3. Assuming the ARM is permanently reset at 5.500% (i.e., the remaining balance on the loan is assumed to be repaid with a 5.500% stated annual interest), which of the three loans will have the *smallest* monthly payment after the rate reset at the end of Year 3?

A 30-year fixed-rate loan

B 20-year fixed-rate loan

C 30-year ARM

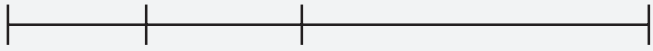
A is correct. The timeline for the 30-year fixed rate is as follows:



Months:	0	1	...	36	...	360
Cash Flows:	$100,000	(*X*)	...	*X*	...	(*X*)
						FV = 0

where *X* is the monthly payment for all 360 months.

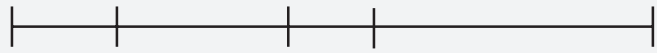
The timeline for the 20-year fixed rate is as follows:



Months:	0	1	...	36	...	240
Cash Flows:	$100,000	(*Y*)	...	*Y*	...	(*Y*)
						FV = 0

where *Y* is the monthly payment for all 240 months.

The timeline for the 30-year ARM is as follows:



Months:	0	1	...	36	37	...	360
Cash Flows:	$100,000	(*Z*)	...	*Z*	*K*	...	(*K*)
							FV = 0

where *Z* is the monthly payment for the first 36 months (three years) and *K* is the monthly payment for months 37 to 360 (payment after Year 3).

The loan payments are calculated using a financial calculator.

Loan	Calculation of Monthly Payments	Initial Payment ($)	Loan Payment after Three Years ($)
30-year fixed	*X* is found as follows: *N* = 12 × 30 = 360, *I*/*Y* = (5/12) = 0.41667, PV = 100,000, FV = 0, calculate PMT = 536.82.	536.82	536.82
20-year fixed	*Y* is found as follows: *N* = 12 × 20 = 240, *I*/*Y* = (4.385/12) = 0.36542, PV = 100,000, FV = 0, calculate PMT = 626.46.	626.46	626.46
30-year ARM	*Z* is found as follows: *N* = 12 × 30 = 360, *I*/*Y* = (3.75/12) = 0.31250, PV = 100,000, FV = 0, calculate PMT = 463.12. *K* is found in two steps: First, the balance at end of Year 3 is found: *N* = 12 × 27 = 324, *I*/*Y* = (3.75/12) = 0.31250, FV = 0, PMT = 463.12, calculate PV = 94,271.43. Then, *K* is calculated as follows: *N* = 324, *I*/*Y* = (5.5/12) = 0.45833, PV = 94,271.43, FV = 0, calculate PMT = 559.16.	463.12 (this corresponds to *Z*)	559.16 (this corresponds to *K*)

After Year 3, the 30-year fixed-rate loan has the lowest payment: 536.82 < 559.16 < 626.46.

Note: Numbers may differ slightly from those given above because of rounding.

B is incorrect; 536.82 < 559.16 < 626.46.

C is incorrect; 536.82 < 559.16 < 626.46.

The Time Value of Money
LOS d, e, f
Section 7.3

32 A New Zealand traveler returned from Singapore with SGD7,500 (Singapore dollars). A foreign exchange dealer provided the traveler with the following quotes:

Ratio	Spot Rates
USD/SGD	1.2600
NZD/USD	0.7670

USD: US dollar; NZD: New Zealand dollar

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

A NZD7,248.

B NZD4,565.

C NZD7,761.

A is correct. The NZD/SGD cross-rate is NZD/USD × USD/SGD = 0.7670 × 1.2600 = 0.9664. The traveler will receive: NZD0.9664 per SGD; NZD0.9664 × SGD7,500 = NZD7,248.

B is incorrect. It calculates NZD/SGD incorrectly by inverting USD/SGD (0.7670 × 1/1.26 = 0.6087) and multiplying by 7,500 = 4,565 NZD.

This is equivalent to incorrectly first converting to USD (1/1.26 × 7,500 SGD) to give 5,952 USD and then converting to NZD ($5,952 × 0.7670 NZD/$ = 4,565 NZD).

C is incorrect. It calculates the cross rate correctly, but divides it into 7,500: 7,500/0.9664 = 7,761.

Currency Exchange Rates
LOS d
Section 3.2

33 A dealer report includes the following exchange rate details:

	Spot Rate	Expected Change over Next Year
USD/EUR	1.30	1.75%
CAD/USD	0.95	–0.25%
CHF/EUR	1.22	0.75%

The expected CAD/CHF cross rate in one year is *closest to*:

A 1.04.

B 0.98.

C 1.02.

C is correct.

	Spot Rate	Expected Appreciation	Expected Spot Rate in One Year
USD/EUR	1.30	1.75%	1.323
CAD/USD	0.95	–0.25%	0.948
CHF/EUR	1.22	0.75%	1.229
CAD/CHF	=	**(USD/EUR) × [(CAD/USD)/ (CHF/EUR)]**	= **1.020**

A is incorrect because the cross rates are calculated incorrectly:

$$\text{CAD/CHF} = S_{\text{CHF}}^{\text{CAD}} \times \left[1 + \sum(\text{expected appreciation of the 3 exchange rates})\right]$$
$$= 1.012 \times [1 + (1.75\% - 0.25\% + 0.75\%)]$$
$$= 1.012 \times (1 + 2.25\%)$$
$$= 1.035$$

B is incorrect. It calculates the Swiss Franc (CHF) relative to the Canadian dollar (CAD): (CHF/EUR)/[(USD/EUR)/(CAD/USD)] = 1.229/(1.323/0.948) = 0.881.

Currency Exchange Rates
LOS d
Section 3.2

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

A economies of scale or lower labor costs.

B an absolute advantage.

C a comparative advantage.

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

A is incorrect. Economies of scale or lower labor costs will likely result in a lower cost of production, but only a comparative advantage is necessary to benefit from trade.

B is incorrect. An absolute advantage in producing a good (or service) arises if one country is able to produce that good at a lower cost or use fewer resources in its production than its trading partner. It is the lower opportunity cost that one country has that is the reason that one country should specialize in order to gain from trade.

International Trade and Capital Flows
LOS c
Section 2.4.1

35 A country having a current account deficit *most likely* will still be able to consume more output than it produces by:

A adjusting interest rates to stimulate higher domestic savings.

B restricting foreign direct investment.

C increasing its net foreign liabilities.

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

B is incorrect. Restricting foreign direct investment would have a *negative* effect on the capital account surplus and the country's ability to increase its consumption.

A is incorrect. A current account deficit is consistent with *low* domestic savings. For the capital account to achieve a surplus, investments should exceed savings.

International Trade and Capital Flows
LOS h
Sections 4.3, 4.4
Currency Exchange Rates
LOS j
Section 5

36 Which of the following statements regarding the money creation process in fractional reserve banking is correct?

A The reserve requirement is negatively related to the quantity of money created.

B The reserve requirement is positively related to the availability of credit.

C The money multiplier is unaffected by the reserve requirement.

A is correct. The amount of money that the banking system creates through fractional reserve banking is a function of the money multiplier, which is expressed as 1 divided by the reserve requirement. Therefore, the smaller the reserve requirement, the greater the money multiplier effect on money creation.

B is incorrect because the reserve requirement multiplied by the deposit amount results in the amount of asset reserve that the bank is required to hold relative to the deposit liability. The higher the reserve requirement, the lower the net amount of the deposit (equal to the total deposit amount less the amount of required reserve) available for lending.

C is incorrect because the money multiplier is expressed as 1 divided by the reserve requirement. A higher reserve requirement results in a lower money multiplier, whereas a lower reserve requirement results in a higher money multiplier.

Monetary and Fiscal Policy
LOS c
Section 2.1.2

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

A contract the economy by reducing bank reserves.

B expand the economy through a lower policy interest rate.

C contract the economy through a lower policy interest rate.

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

B is incorrect. Central bank selling of bonds is not expansionary.

C is incorrect. Central bank selling of bonds will reduce the money supply through its impact on bank reserves, which will result in a higher, not lower, interest rate.

Monetary and Fiscal Policy
LOS h, k, m
Sections 2.3.2.1, 2.3.2.2

38 The effectiveness of infrastructure spending as a near-term fiscal stimulant would be *least* constrained by the:

A impact lag.

B action lag.

C recognition lag.

C is correct. Recognition lag refers to the time required before policymakers realize that a policy action is required because data appear with a considerable lag and are subject to substantial revision. A policy action to spend on infrastructure would occur at the conclusion of this lag and, as a result, the recognition lag is not a constraint on any specific type of policy action.

A is incorrect because the impact lag refers to the length of time required for a policy action to become evident in the economy. When spending on an infrastructure project begins, there will be a delay in judging its effects and making any related adjustments to more effectively stimulate the economy due to the impact lag.

B is incorrect because the action lag refers to the length of time required to actually implement a policy action once it has been decided on. In the case of infrastructure spending, it may take several months of planning before the project is put into action, thereby constraining its near-term stimulative effect.

Monetary and Fiscal Policy
LOS r
Section 3.3.2

39 A firm in a market environment characterized by monopolistic competition is *most likely* to:

A continue to experience economic profit in the long run.

B have a well-defined supply function reflecting its marginal and average costs.

C have many competitors each following its own product differentiation strategy.

C is correct. As the name implies, monopolistic competition is a hybrid market structure. The most distinctive factor in monopolistic competition is product differentiation. Although the market is made up of many firms that compose the product group, each producer attempts to distinguish its product from that of the others, and product differentiation is accomplished in a variety of ways.

A is incorrect. Just as with the perfectly competitive market structure, with relatively low entry costs, more firms will enter the market and lure some customers away from the firm making an economic profit. The loss of customers to new entrant firms will drive down the demand for all firms producing similar products. In the long run for the monopolistically competitive firm, economic profit will fall to zero.

B is incorrect. In monopolistic competition, there is no well-defined supply function. The information used to determine the appropriate level of output is based on the intersection of MC and MR. However, the price that will be charged is based on the market demand schedule. The firm's supply curve should measure the quantity the firm is willing to supply at various prices. That information is not represented by either marginal cost or average cost.

The Firm and Market Structures
LOS a, b, c
Section 4

40 Six companies in an industry have the following market shares:

Company	A	B	C	D	E	F
Market Share (%)	30	25	16	12	10	7

If Companies D and F merge into a new Company, G, the industry's three-company concentration ratio would be *closest* to:

A 72%.

B 74%.

C 71%.

B is correct. The concentration ratio for the top three companies would be 74%:

A (30%) + B (25%) + G (12% + 7%).

A is incorrect. 72% is the concentration ratio of the top three companies if the two smallest merge: A (30%) + B (25%) + [E (10%) + F (7%)].

C is incorrect. 71% is the concentration ratio of the original top three companies: A (30%) + B (25%) + C (16%).

The Firm and Market Structures
LOS g
Section 7.2

41 In the short run, a firm operating in a perfectly competitive market will *most likely* avoid shutdown if it is able to earn sufficient revenue to cover which of the following costs?

A Fixed

B Marginal

C Variable

C is correct. Shutdown is defined as a situation in which the firm stops production but still confronts the payment of fixed costs in the short run. In the short run, a business can operate at a loss as long as it covers its variable costs even though it is not earning sufficient revenue to cover fixed costs. If variable costs cannot be covered in the short run ($P < AVC$), the firm will shut down operations and simply absorb the unavoidable fixed costs.

B is incorrect. Marginal cost is the incremental cost of producing one more unit and can be calculated as either (Δ total cost/Δ quantity) or (Δ total variable cost/Δ quantity).

A is incorrect. In the short run, a business can operate at a loss as long as it covers variable costs even though it is not earning sufficient revenue to cover fixed costs.

Topics in Demand and Supply Analysis
LOS e
Section 3.2.7

42 Assuming all other factors remain unchanged, which of the following changes would *most likely* cause a simultaneous increase in the participation ratio and a decrease in the unemployment rate?

A A decrease in the number of unemployed people

B A decrease in the total population of working-age people

C An increase in the number of people included in the labor force

C is correct. The participation ratio (or activity ratio) is the ratio of the number of people in the labor force to the total population of working-age people, and the unemployment rate is the ratio of the number of unemployed to the number of people in the labor force. The labor force is the numerator in the participation ratio, and the denominator is the unemployment rate. Therefore, assuming all else remains unchanged, an increase in the number of people included in the labor force would cause the participation ratio to increase and unemployment rate to decrease.

A is incorrect. Although a decrease in the total number of unemployed people would decrease the unemployment rate, this would not have a direct effect on the participation rate.

B is incorrect. Although a decrease in the total population of working age people would increase the participation rate if the size of the labor force remained unchanged, this would have no direct effect on the unemployment rate.

Understanding Business Cycles
LOS d
Section 4.1

43 After noting positive changes in the aggregate index of coincident economic indicators, an increase in the ratio of consumer installment debt to income would *most likely* help confirm that an expansion is:

A forthcoming.

B underway.

C ending.

B is correct. The ratio of consumer installment debt to income is a lagging indicator. An increase in it, by itself, would be evidence that an upturn is already underway. This would confirm the implication of positive changes in coincident indicators that an expansion is in place.

A is incorrect. Leading indicators indicate what is coming, but the ratio of consumer installment debt to income is a lagging indicator. The reason it is a lagging indicator is because consumers only borrow heavily when they are confident in the economy.

C is incorrect. Although the ratio of consumer installment debt to income is a lagging indicator, it is more directly indicating that an upturn has been underway, not that the expansion is over because consumers only borrow heavily when they are confident in the economy.

Understanding Business Cycles
LOS i
Section 5

44 Selected information for a company and its industry's average return on equity (ROE) is provided:

Company	(£)	Industry	(£)
Earnings before interest and taxes (EBIT)	76,000	EBIT margin	0.28
Pretax profit	66,400	Interest burden	0.70
Net income	44,500	Tax burden	0.67
Sales	400,000	Total asset turnover	0.71
Total assets	524,488	Financial leverage	1.89
Total equity	296,488		
ROE	15.0%		17.6%

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

A financial leverage.

B tax burden ratio.

C interest burden ratio.

A is correct. Compare the three specified components from the five-way DuPont analysis:

	Calculation	Company	Industry
Tax burden ratio	(Net income/EBT)	44,488/66,400 = 0.67 (Same as industry)	0.67
Financial leverages	(Total assets/ Equity)	524,488/296,488 = 1.77 (Lower than industry)	1.89
Interest burden ratio	(EBT/EBIT)	66,400/76,000 = 0.87 (Higher than industry)	0.70

Note: EBT is pre-tax profit (earnings before tax)

The lower financial leverage ratio relative to the industry is one of the causes of the company's poor relative performance.

B is incorrect, as per table.

C is incorrect, as per table.

Financial Analysis Techniques
LOS c, d
Section 4.6.2

45 When forecasting earnings, an analyst's *best* approach is to:

A establish a precise forecast based on the results of economic and financial analysis.

B calculate a range of possibilities based on the results of financial analysis.

C utilize the results of financial analysis and professional judgment.

C is correct. Forecasts are not limited to a single point estimate but should involve a range of possibilities. The results of financial analysis are integral to this process, along with judgment of the analysts.

A is incorrect. Forecasts should involve a range of possibilities and should not be based solely on economic and financial analysis.

B is incorrect. While analysts should derive a range of possibilities, they should not rely solely on financial analysis.

Financial Analysis Techniques
LOS g
Section 8

46 Which of the following is lowest in quality on the spectrum of GAAP conforming financial reports?

A Aggressive accounting choices

B Earnings management

C Conservative accounting choices

B is correct. Earnings management represents deliberate actions to influence reported earnings and their interpretation. The distinction between earnings management and biased choices is subtle and, primarily, a matter of intent.

A is incorrect because aggressive accounting is a biased choice. Biased accounting choices are higher in quality than earnings management on the spectrum of GAAP conforming financial reports.

C is incorrect because conservative accounting is a biased choice. Biased accounting choices are higher in quality than earnings management on the spectrum of GAAP conforming financial reports.

Financial Reporting Quality
LOS b
Section 2 to 2.3.1

47 Which of the following techniques is *most likely* to provide a company with the opportunity to inflate earnings?

A Reductions in the useful lives of fixed assets

B Last-in, first-out (LIFO) liquidation

C Increases to tax asset valuation allowances

B is correct. The LIFO liquidation of low-cost inventory layers results in the transfer of low inventory costs to the income statement as costs of goods sold. With reduced costs of goods sold, reported earnings are higher.

A is incorrect. Reducing the useful lives of fixed assets results in faster depreciation, and hence higher reported depreciation expense and lower reported earnings.

C is incorrect. Increases to tax asset valuation allowances are equivalent to asset write-downs, which reduce reported earnings.

Financial Reporting Quality
LOS h
Section 4.2.3
Inventories
LOS e
Section 4

48 The SEC's approach to addressing the significant differences in financial reporting under International Financial Reporting Standards (IFRS) and US GAAP is *best* described as:

A requiring issuers to provide disclosures describing key differences.

B mandating that non-US issuers provide a reconciliation to US GAAP.

C publicly advocating for global accounting standards and convergence.

C is correct. The SEC now advocates for global accounting standards through public announcements, such as its "Statement in Support of Convergence and Global Accounting Standards" (2010). In the past, the SEC had required reconciliations between IFRS and US GAAP, but these requirements were withdrawn in 2008. The SEC now imposes no requirements on its issuers.

A is incorrect. Before 2008, issuers were required to provide disclosures in support of the reconciliation from IFRS to US GAAP.

B is incorrect. Before 2008, issuers were required to provide a reconciliation from IFRS to US GAAP.

Financial Reporting Standards
LOS c
Section 4

49 Analysts can *best* address the challenges of comparing financial statements prepared under US GAAP with those prepared under International Financial Reporting Standards (IFRS) by:

A referring to the reconciliation from IFRS to US GAAP provided in the notes.

B assuming differences are minor given US GAAP and IFRS convergence.

C monitoring changes in both sets of standards and interpreting cautiously.

C is correct. Significant differences still exist between IFRS and US GAAP, and in most cases, analysts will lack the information necessary to make specific adjustments to address these differences. As such, comparisons must be interpreted cautiously.

B is incorrect. Significant differences still exist between IFRS and US GAAP, and should not be ignored.

A is incorrect. Reconciliations are no longer readily available. The SEC eliminated the reconciliation requirement for companies that prepared their financial statements according to IFRS in 2007.

Financial Reporting Standards
LOS h
Section 7

50 An analyst's examination of the performance of a company is *least likely* to include an assessment of a company's:

A assets relative to its liabilities.

B profitability.

C cash flow generating ability.

A is correct. Assessment of performance includes analysis of profitability and cash flow generating ability. The relationship between assets and liabilities is used to assess a company's financial position, not its performance.

B is incorrect. Assessment of performance includes analysis of profitability.

C is incorrect. Assessment of performance includes analysis of cash flow generating ability.

Financial Statement Analysis: An Introduction
LOS a
Section 2

51 A company has a building with a net carrying amount of $100,000 and a tax base of $120,000. The tax rate was 20% when the asset was purchased, but it is scheduled to be reduced to 17% this year. Which of the following will the company *most likely* report related to this building?

A Deferred tax asset: $4,000

B Deferred tax asset: $3,400

C Deferred tax liability: $600

B is correct. The deferred tax asset is based on the temporary difference arising from the difference in the carrying value for taxes vs. the financial statements = (120,000 – 100,000) × 17% = 3,400. The rate that should be used is the rate expected when the reversal will occur, which is now the lower rate of 17%.

A is incorrect because the old tax rate is used: (120,000 – 100,000) × 20% = 4,000.

C is incorrect. It incorrectly nets the tax rates: (100,000 – 120,000) × (20% – 17%) = –600.

Income Taxes
LOS e
Section 3.3

52 A company manufactures aluminum cans for the beverage industry and prepares its financial statements in accordance with International Financial Reporting Standards (IFRS). During its latest full fiscal year, the company recorded the following:

Inventory Item	Amount € (thousands)
Raw material aluminum costs	150,000
Storage of finished cans	15,000
Wasted aluminum materials from abnormal production errors during the year	500
Transportation-in costs	640
Tax-related duties	340
Administrative overhead	7,500
Trade discounts due to volume purchases throughout the year	520

The total costs included in inventory (in € thousands) for the year are *closest* to:

A €150,980.

B €150,460.

C €149,820.

B is correct. Total inventory costs are as follows:

Inventory Item	Amount € (thousands)
Raw materials	150,000
Transportation-in	640
Tax-related duties	340
Less: Trade discounts	(520)
Total inventory costs	**150,460**

Abnormal waste, storage of finished goods, and administrative overhead are expensed.

A is incorrect because trade discounts of €520 were not subtracted from inventory, giving the incorrect total €150,980.

C is incorrect because transportation of €640 was not added to inventory, giving the incorrect total of €149,820.

Inventories
LOS a
Section 2

53 A company purchased a warehouse for €35 million and incurred the following additional costs in getting the warehouse ready for use:

- €2.0 million for upgrades to the building's roof and windows

- €0.5 million to modify the interior layout to meet their needs (moving walls and doors, inserting and removing partitions, etc.)
- €0.1 million on an orientation and training session to familiarize employees with the facility

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

A €37.6.

B €37.5.

C €37.0.

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

	€ millions
Initial cost	35.00
Upgrades to roof and windows	2.00
Modifications to interiors	0.50
Total cost	37.5

A is incorrect. It includes the staff training: 37.5 + 0.1 = 37.6.
C is incorrect. It does not include the modifications to the interior: 35 + 2.0 = 37.0.

Long-Lived Assets
LOS a
Section 2.1

54 The following information is available for an asset purchased at the start of its first year of operations (Year 1):

- Purchase price: $1.8 million
- Estimated useful life: 5 years
- Estimated residual value: $500,000

If the company uses the double declining balance method of depreciation, the depreciation expense in Year 3 will be *closest* to:

A $187,200.

B $259,200.

C $148,000.

C is correct. Under the double declining balance approach, the depreciation rate applied to the carrying amount is double the depreciation rate for the straight-line method. Because the rate for the straight-line method is 20% (1/5), the double declining rate is 40%. Depreciation expense is recorded until the net book value (NBV) reaches the residual value.

	Year 1	Year 2	Year 3
Opening NBV	$1,800,000	$1,080,000	$648,000
Depreciation expense (40% of opening NBV)	720,000	432,000	148,000
Ending NBV	1,080,000	648,000	500,000*

A is incorrect. This is the double declining approach, but with the residual value incorrectly deducted from the depreciation base:

	Year 1	Year 2	Year 3
Opening carrying value	1,300,000*	780,000	468,000
Depreciation expense (40% of opening NBV)	520,000	312,000	187,200
Ending carrying value	780,000	468,000	512,000

* incorrectly calculated net of the residual value

B is incorrect. This is the full double declining depreciation expense that would have been recorded if the residual value had been below $388,800:

	Year 1	Year 2	Year 3
Opening net book value (NBV)	$1,800,000	$1,080,000	$648,000
Depreciation expense (40% of opening NBV)	720,000	432,000	259,200
Ending net book value	1,080,000	648,000	388,800

Long-Lived Assets
LOS e
Section 3.1

55 Under IFRS, it is *most* appropriate to include which of the following pension costs of a defined-benefit plan in other comprehensive income?

A Net interest expense accrued on the beginning net pension liability

B Actuarial gains or losses

C Employees service cost

B is correct. Under IFRS, only actuarial gains or losses can be recognized in other comprehensive income.

A is incorrect. Net interest expense accrued on the beginning net pension liability is recognized in profit and loss.

C is incorrect. Employees service cost is recognized in profit and loss.

Non-Current (Long-Term) Liabilities
LOS j
Sections 4

56 If a company repurchases its own shares and can reissue them at a later time, these shares are *best* described as:

A preferred stock.

B marketable securities.

C treasury stock.

C is correct. When a company repurchases its own shares and does not cancel them, they are referred to as treasury shares (or treasury stock).

A is incorrect. Preferred shares (or preferred stock), a component of equity, are a type of equity interest, that ranks above common shares with respect to payment of dividends and the distribution of net assets upon liquidation.

B is incorrect. Marketable securities are financial assets and include investments in debt or equity securities that are traded in a public market.

Understanding Balance Sheets
LOS f
Section 6.1

57 Last year, a company's current ratio was 0.96. Partial information is provided from the company's balance sheet for the current year:

Current Year	($ millions)
Cash and equivalents	1,950
Intangible assets	870
Inventory	950
Goodwill	4,990
Accounts receivable	2,540
Current portion of long-term debt	720
Total current liabilities	4,920

No other current assets or current liabilities were reported.

Comparing the company's current ratio this year with the prior year *most likely* indicates that the company's ability to meet short-term obligations has:

A increased.

B decreased.

C not changed.

A is correct. First identify the current assets: cash and equivalents, inventory, and accounts receivable. Then calculate the current ratio (Current assets/Current liabilities) as follows:

($ millions)	Current Year	Prior Year
Cash and equivalents	1,950	
Accounts receivable	2,540	
Inventory	950	

($ millions)	Current Year	Prior Year
Total current assets	5,440	
Total current liabilities	4,920	
Current ratio	1.11	0.96

An increase in the current ratio (from 0.96 to 1.11) most likely indicates a higher level of liquidity and, therefore, an increased ability to meet short-term obligations.

B is incorrect. It excludes the inventory (confusing current ratio with quick ratio) and appears to have decreased: (1950 + 2,540)/4920 = 0.91.

C is incorrect. It incorrectly double counts the current portion of the long-term debt, which is already included in total current liabilities, so it appears to be unchanged: (5,440/(4,920 + 720) = 0.964.

Understanding Balance Sheets
LOS d, h
Sections 3 and 7
Financial Analysis Techniques
LOS b
Section 4.3.2

58 The following information (in millions) on a company is available:

Cost of goods sold	$500
Increase in total assets	$250
Increase in total liabilities	$200
Change in inventory	–$30
Change in accounts payable	–$25

The amount of cash (in millions) that the company paid to its suppliers is *closest* to:

A $505.

B $495.

C $445.

B is correct.

Cost of goods sold	$500
Minus decrease in inventory	–$30
Purchases from suppliers	$470
Plus decrease in accounts payable	$25
Cash paid to suppliers	$495

A is incorrect. Decrease in inventory treated as an increase and decrease in AP treated as decrease in cash flow: 500 + 30 – 25 = 505.

C is incorrect. Decrease in accounts payable treated as a reduction rather than an increase in cash flow: 500 – 30 – 25 = 445.

Understanding Cash Flow Statements
LOS f
Section 3.2.1.2

59 Compared with its net income, a mature company's operating cash flow is *most likely*:

A the same.

B lower.

C higher.

C is correct. For a mature company, because net income includes non-cash expenses (depreciation and amortization), operating cash flow typically exceeds net income.

A is incorrect. For a mature company, net income includes non-cash expenses (depreciation and amortization), so it is expected and desirable for operating cash flow to exceed net income, not for them to be equal.

B is incorrect. For a mature company, net income includes non-cash expenses (depreciation and amortization), so it is expected and desirable for operating cash flow exceeds net income. If operating cash flows were lower than net income, this would be an indication of poor earnings quality.

Understanding Cash Flow Statements
LOS h
Section 4.1

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

A May.

B July.

C August.

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

A is incorrect. The order date is not relevant here because all of the critical elements in the revenue recognition process are not satisfied until July.

C is incorrect. The payment date is not relevant here because all of the critical elements in the revenue recognition process are not satisfied until July.

Understanding Income Statements
LOS b
Section 3.1

61 The following relates to a company's common equity over the course of the year:

Outstanding shares, at start of the year	2,000,000
Stock options outstanding, at start and end of the year (Exercise price: $5)	100,000
Shares issued on 1 April	300,000
Shares repurchased (treasury shares) on 1 July	100,000
Average market price of common shares for the year	$20/share

If the company's net income for the year is $5,000,000, its diluted EPS is *closest* to*:*

A $2.17.

B $2.22.

C $2.20.

B is correct. First, determine the incremental shares issued from stock option exercise (treasury stock method):

Shares issued at exercise price 100,000 share × $5 = $500,000	100,000 shares
Minus shares purchased with cash received at average market price: $500,000/$20	–25,000 shares
Incremental shares issues	75,000 shares

Weighted Average Shares Outstanding

Original shares	2,000,000	2,000,000 shares × (12 months/12 months)
Incremental shares issued, assuming options were exercised	75,000	75,000 shares × (12 months/12 months)
Shares issued 1 April	225,000	300,000 shares × (9 months/12 months)

(continued)

(Continued)

Shares repurchased 1 July	–50,000	100,000 shares × (6 months/12 months)
Weighted average shares outstanding	2,250,000	

$$\text{Diluted EPS} = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average number of shares}}$$

$$= \frac{\$5{,}000{,}000 - \$0}{2{,}250{,}000 \text{ shares}}$$

$$= \$2.22/\text{share}$$

A is incorrect. It includes the options at full value not using the Treasury stock method and forgets to prorate the others issued and repurchased

$$\$5{,}000{,}000/(2{,}000{,}000 + 100{,}000 + 300{,}000 - 100{,}000) = 2.17$$

C is incorrect. It does not prorate the new shares issued or repurchased for the length of time outstanding: (2,000 + 75 + 300 – 100) = 2,275; 5,000/2,275 = 2.20.

Or it ignores the buyback: (2,000 + 100 + 225 – 50) = 2,275; 5,000/2,275 = 2.198 = 2.20.

Understanding Income Statements
LOS h, i
Sections 6.2, 6.3.3

62 When a new project reduces the cash flows of an existing project of the same firm, it is *best* described as a(n):

A sunk cost.

B opportunity cost.

C externality.

C is correct. A new project reducing the cash flows of an existing project is an externality called cannibalization.

A is incorrect because it is an example of cannibalization and not a sunk cost.

B is incorrect because it is an example of cannibalization and not an opportunity cost.

Capital Budgeting
LOS b
Section 3

63 A company has 100 million shares outstanding. The share price of a company's stock is £15 just prior to announcing a £100 million expansionary investment in a new plant, and the company estimates that the present value of future after-tax cash flows will be £150 million. Analysts, however, estimate that the new plant's profitability will be lower than the company's expectations. The company's stock price will *most likely*:

A drop below £15 per share due to the cannibalization of revenue from the new plant.

B increase by less than £0.50 per share.

C increase by the new plant's net present value per share.

B is correct. The value of a company is the value of its existing investments plus the net present values of all of its future investments. The NPV of this new plant is £150 million – £100 million = £50 million. The price per share should increase by NPV per share or £50 million/100 million shares = £0.50 per share. As the new plant's profitability is less than expectations, the NPV per share (and hence the increase in the stock price) should therefore be slightly below £0.50 per share.

A is incorrect. It is only new plant's profitability that is below the average not the overall. The company value should not fall below £15 per share, all things being equal.

C is incorrect. See the above calculation.

Capital Budgeting
LOS f
Section 4.10

64 Which of the following conditions is *most likely* to facilitate shareholder activism?

A Cross-shareholdings

B Cumulative voting

C Staggered boards

B is correct. Cumulative voting facilitates shareholder activism by allowing shareholders to accumulate and vote all their shares for a single candidate in an election involving more than one candidate. Minority shareholders, who may be activist shareholders, are more likely to successfully elect a board member in this way.

A is incorrect. Cross-shareholdings inhibit shareholder activism because the management teams of the cross-held companies implicitly agree to use their votes to support each other's interests.

C is incorrect. Staggered boards inhibit shareholder activism by limiting the number of board members that are elected in a given year. This makes it difficult to implement immediate change.

Corporate Governance and ESG: An Introduction
LOS d, b
Section 4.2.1

65 The *least likely* reason investors incorporate environmental and societal factors into their investment analysis is to:

A improve investment performance.

B have a more comprehensive understanding of a company's risks.

C limit investments to those equities that are consistent with their moral or ethical values.

C is correct. Environmental, social, and governance investment analysis can be implemented across all asset classes and is not limited to equity investments. It is done to provide a more comprehensive understanding of a company's risks and improve investment performance.

A is incorrect. ESG is done to provide a more comprehensive understanding of a company's risks.

B is incorrect. ESG is done to improve investment performance.

Corporate Governance and ESG: An Introduction
LOS j
Section 9

66 A company's data are provided in the following table:

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

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

A 14.0%.

B 11.5%.

C 13.0%.

C is correct. Convert the D/E to determine the weights of debt and equity as follows:

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

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

$$\begin{aligned}\text{WACC} &= w_d r_d(1 - t) + w_p r_p + w_e r_e \\ &= 33.3\% \times 10\% \times (1 - 30\%) + 66.7\% \times 16\% = 13.0\%\end{aligned}$$

A is incorrect because the debt is not tax adjusted when determining the WACC.

$$\text{WACC} = 33.3\% \times 10\% + 66.7\% \times 16\% = 14.0\%$$

B is incorrect because the D/E is used as the weight for debt and equity.

$$\text{WACC} = 50\% \times 10\% \times (1 - 30\%) + 50\% \times 16\% = 11.5\%$$

Cost of Capital
LOS a, b
Sections 2, 2.1, 2.2

67 When estimating the NPV for a project with a risk level higher than the company's average risk level, an analyst will *most likely* discount the project's cash flows by a rate that is:

A determined by the firm's target capital structure.

B below the WACC.

C above the WACC.

C is correct. If the systematic risk of the project is above average relative to the company's current portfolio of projects, an upward adjustment is made to the company's MCC or WACC.

A is incorrect. The firm's target capital structure is used to determine WACC, but in this case we need more adjustment in the company's WACC.

B is incorrect. If the systematic risk of the project is above average relative to the company's current portfolio of projects, an upward adjustment is made to the company's MCC or WACC.

Cost of Capital
LOS e
Section 2.3

68 A class of noncallable, nonconvertible preferred stock was issued at $45.00 per share with a dividend of $5.25. The preferred stock is now trading at $60.00 per share. Earnings of the company are growing at 3.00%. The cost of preferred stock is *closest* to:

A 11.7%.

B 8.8%.

C 5.8%.

B is correct. The cost of preferred stock is:

$$r_p = \frac{D_p}{P_p}$$

where:

r_p =the cost of preferred stock
D_p =the preferred stock dividend per share
P_p =the current preferred stock price per share

The cost of preferred stock is 5.25/60.00 = 8.75%

C is incorrect. If the dividend growth rate of 3% is subtracted from 8.75% (as per the Gordon growth model), the conclusion will be 5.75%.

A is incorrect. If the issuance cost is being used instead of current price, it will lead to a wrong conclusion of 11.67%.

Cost of Capital
LOS g
Section 3

69 Which of the following statements is the *most* appropriate treatment of flotation costs for capital budgeting purposes? Flotation costs should be:

A expensed in the current period.

B incorporated into the estimated cost of capital.

C deducted as one of the project's initial-period cash flows.

C is correct. Flotation costs are an additional cost of the project and should be incorporated as an adjustment to the initial-period cash flows in the valuation computation.

A is incorrect. Expensing is an accounting treatment of the costs, not a capital budgeting treatment.

B is incorrect. Including the flotation cost in the estimated cost of capital is theoretically incorrect. By doing so we are adjusting the present value of the future cash flows by a fixed percentage, i.e., the adjusted cost of capital.

Cost of Capital
LOS l
Section 4.4

70 Business risk *most likely* incorporates operating risk and:

A financial risk.

B sales risk.

C interest rate risk.

B is correct. Business risk is the combination of sales risk and operating risk.

A is incorrect because does not include financial risk.

C is incorrect because business risk does not include interest rate risk.

Measures of Leverage
LOS a
Sections 3.1, 3.2

71 The following data apply to two companies producing similar products.

	Company A	Company B
Number of units produced and sold	1 million	1 million
Sale price per unit	$100	$100
Variable cost per unit	$60	$50
Fixed operating costs	$20 million	$40 million
Fixed financing expenses	$10 million	$5 million
Degree of operating leverage (DOL)	?	5.0
Degree of financial leverage (DFL)	2.0	2.0

Compared with Company B, Company A has:

A a higher degree of total leverage.

B a lower sensitivity of operating income to changes in units sold.

C the same sensitivity of operating income to changes in net income.

B is correct.

	Company A	Company B
Degree of operating leverage (DOL) $\text{DOL} = \frac{Q(P-V)}{Q(P-V)-F}$	$\frac{1 \text{ million} \times (\$100 - \$60)}{1 \text{ million} \times (\$100 - \$60) - \$20 \text{ million}} = 2.0$	5.0 (as given)
Degree of financial leverage (DFL) $\text{DFL} = \frac{Q(P-V)-F}{Q(P-V)-F-C}$	2.0 (as given)	2.0 (as given)
Degree of total leverage (DTL) $\text{DTL} = \text{DOL} \times \text{DFL}$	2.0 × 2.0 = 4.0	5.0 × 2.0 = 10.0

The DOL is lower for Company A than Company B (as per the table), meaning Company A's operating income is less sensitive to a change in the units sold relative to Company B.

A is incorrect. DTL for Company A is lower than for Company B (as per table above).

C is incorrect. DFL for both companies equal to 2.0. However, the interpretation of DFL should be the sensitivity of net income to changes in operating income.

Measures of Leverage
LOS b
Sections 3.3–3.5

72 The unit contribution margin for a product is $12. Assuming fixed costs of $12,000, interest costs of $3,000, and a tax rate of 40%, the operating breakeven point (in units) is *closest* to:

A 1,250.

B 750.

C 1,000.

C is correct. The operating breakeven point, Q_{OBE}, is:

$$\frac{\text{Fixed operating costs}}{\text{Contribution margin}} = \frac{\$12{,}000}{\$12} = 1{,}000$$

B is incorrect because the numerator is ($12,000 + $3,000) × (1 – 40%).

A is incorrect because the numerator is ($12,000 + $3,000) making it the breakeven quantity, Q_{BE}, and not the operating breakeven quantity, Q_{OBE}.

Measures of Leverage
LOS e
Section 3.6

73 The following information is available for a company's bank account:

Total deposits (millions)	$16.0
Average daily float (millions)	$2.5
Number of days	15

The float factor for the company is *closest* to:

A 2.3.

B 6.4.

C 0.4.

A is correct.

$$\text{Float factor} = \text{Average daily float}/\text{Average daily deposit}$$
$$= \$2.5 \text{ million}/(\$16 \text{ million}/15) = 2.3$$

B is incorrect because it uses (Total deposit/Average daily float).
C is incorrect because it uses (Average daily deposit/Average daily float).

Working Capital Management
LOS f, g
Section 5.2, Example 4

74 You are preparing an investment policy statement for a client who manages her own successful marketing consultancy. Her annual income is approximately $500,000. She describes herself as a finance novice. Most of her savings are invested in bank term deposits and short-term government securities. In her responses to the standard risk assessment questionnaire, she strongly agrees with the statements that she "feels more comfortable putting money in a bank account than in the stock market." Also, she "thinks of the word 'risk' as being a 'loss'". Based on this information, your client's ability and willingness to take risk can best be described as:

A low ability and high willingness.

B high ability and willingness.

C high ability and low willingness.

C is correct. Although the client owns a successful business and has a high income, she exhibits above-average risk aversion, indicating that her ability to take risk is high, but her willingness to take risk is low.

A is incorrect because her ability to take risk is high (not low), and there is low (not high) willingness to take risk.

B is incorrect because her ability to take risk is high, but there is low (not high) willingness to take risk.

Basics of Portfolio Planning and Construction
LOS d
Section 2.2

75 A key difference between a wrap account and a mutual fund is that wrap accounts:

A have assets that are owned directly by the individual.

B cannot be tailored to the tax needs of a client.

C have a lower required minimum investment.

A is correct. The key difference between a wrap account and a mutual fund is that in a wrap account, the assets are owned directly by the individual.

B is incorrect. Wrap accounts can be tailored to the tax needs of a client.

C is incorrect. Wrap accounts have higher required minimum investments.

Portfolio Management: An Overview
LOS e
Section 5.3.2

76 The correlation between the historical returns of Stock A and Stock B is 0.75. If the variance of Stock A is 0.16 and the variance of Stock B is 0.09, the covariance of returns of Stock A and Stock B is *closest* to:

A 0.01.

B 0.09.

C 0.16.

B is correct.

$$\text{Cov}(A,B) = \rho_{AB}\sigma_A\sigma_B = 0.75 \times 0.4 \times 0.3 = 0.09$$

A is incorrect. Variance is used instead of standard deviation. Covariance is incorrectly calculated as $0.75 \times 0.16 \times 0.09 = 0.0108$.

C is incorrect. Covariance is incorrectly calculated as $[(0.4 \times 0.3)/0.75] = 0.16$.

Portfolio Risk and Return: Part I
LOS c
Section 2.3.3

77 An asset has an annual return of 19.9%, standard deviation of returns of 18.5%, and correlation with the market of 0.9. If the standard deviation of returns on the market is 15.9% and the risk-free rate is 1%, the beta of this asset is *closest* to:

A 1.02.

B 1.05.

C 1.16

B is correct.

$$\begin{aligned}\beta &= (\rho_{i,m}\sigma_i)/\sigma_m \\ &= (0.90 \times 0.185)/0.159 \\ &= 1.047\end{aligned}$$

A is incorrect because it calculates the Sharpe ratio instead of beta: (19.9% – 1.0%)/18.5% = 1.02.

C is incorrect because it is the ratio of the standard deviation of the asset to the standard deviation of the market: (18.5%/15.9%) = 1.16.

Portfolio Risk and Return: Part II
LOS e
Section 3.2.4

78 A security has a beta of 1.30. If the risk-free rate of interest is 3% and the expected return of the market is 8%, based on the capital asset pricing model (CAPM), the expected return of the security is *closest to*:

A 6.5%.

B 13.4%.

C 9.5%.

C is correct. The formula for the CAPM is expressed as $E(R_i) = R_f + \beta_i[E(R_m) - R_f]$ or 3% + [1.3 × (8% – 3%)] = 9.5%.

A is incorrect. It ignores the risk-free rate: 1.3 × (8% – 3%) = 6.5%.

B is incorrect. The market return is incorrectly interpreted as the market risk premium: 3% + 1.3 × 8% = 13.4%.

Portfolio Risk and Return: Part II
LOS g
Section 4.2

79 Two risk managers are discussing how an organization's risk tolerance should be determined. The first manager says, "The risk tolerance must reflect the losses or shortfalls that will cause the organization to fail to meet critical objectives." The second manager responds, "The risk tolerance must reflect the external forces that bring uncertainty to the organization." Which of them is *most likely* correct?

A The second risk manager

B The first risk manager

C Both risk managers

C is correct. The risk tolerance of an organization should reflect both an "inside" view and an "outside" view. The inside view asks what level of loss will leave the organization unable to meet critical objectives. The outside view asks what sources of uncertainty or risk the organization faces.

A is incorrect because both an "inside" and "outside" view must be reflected.

B is incorrect because both an "inside" and "outside" view must be reflected.

Risk Management: An Introduction
LOS d
Section 3.2

80 An example of risk transfer combined with self-insurance is *most likely*:

A a bond portfolio hedged with an interest rate option.

B an insurance policy with a deductible.

C a bank that establishes a loan loss reserve fund.

B is correct. Risk transfer is accomplished through an insurance policy. A deductible in an insurance policy means the insured is bearing some of the risk of loss and thereby (partially) self-insuring. Hedging with derivatives accomplishes risk shifting, not risk transfer. A bank loan loss reserve is a form of self-insurance combined with diversification, but it does not include risk transfer.

A is incorrect because hedging with derivatives accomplishes risk shifting, not risk transfer.

C is incorrect because a bank loan loss reserve is a form of self-insurance combined with diversification, but it does not include risk transfer.

Risk Management: An Introduction
LOS g
Section 5.3

81 A company's $100 par value perpetual preferred stock has a dividend rate of 7% and a required rate of return of 11%. The company's earnings are expected to grow at a constant rate of 3% 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.

A is correct.

$$\text{Value of perpetual preferred stock} = \frac{\text{Dividend}}{\text{Required rate of return}}$$

$$= \frac{7}{0.11} = \$63.64.$$

The stock is overvalued by $75.00 – 63.64 = $11.36.

B is incorrect. It uses the constant growth model.

$$V = \frac{7 \times 1.03}{0.11 - 0.03} = \$90.13$$

The stock is undervalued by $90.13 – $75.00 = $15.13.

C is incorrect. It uses the stock's par value to determine the over- or undervaluation.

$$\text{Value of perpetual preferred stock} = \frac{\text{Dividend}}{\text{Required rate of return}}$$

$$= \frac{7}{0.11} = \$63.64.$$

The stock is overvalued by $100.00 – 63.64 = $36.36.

Equity Valuation: Concepts and Basic Tools
LOS f
Section 4.1

82 The following data pertain to a company that can be appropriately valued using the Gordon growth model. The dividend is expected to grow indefinitely at the existing sustainable growth rate.

EPS growth rate (three-year average)	7.50%
Current dividend per share	$3.00
Return on equity	15%
Dividend payout ratio	45%
Investors' required rate of return	16%

The stock's intrinsic value is *closest* to:

A $34.62.

B $37.94.

C $41.90.

C is correct.

$$V_0 = \frac{D_0(1+g)}{r-g}$$

where

$$\text{Sustainable growth rate} = g = b \times \text{ROE}$$
$$b = (1 - \text{Payout ratio})$$
$$g = (1 - 0.45) \times 15\% = 8.25\%$$
$$V_0 = (\$3 \times 1.0825)/(0.16 - 0.0825) = \$41.90$$

A is incorrect. It uses payout ratio instead of retention ratio (*b*) to compute sustainable growth rate

$$g = 0.45 \times 15\% = 6.75\%$$
$$V_0 = \$3(1.0675)/(0.16 - 0.0675) = \$34.62$$

B is incorrect. It uses the EPS growth instead of sustainable growth rate.

$$V_0 = \$3(1.075)/(0.16 - 0.075) = \$37.94$$

Equity Valuation: Concepts and Basic Tools
LOS g
Section 4.2

83 An investor wants to estimate the market capitalization of a company located in India and has gathered the following data:

Values (INR millions)	
Market value of debt	10.0
Market value of preferred stock	5.0
Cash and short-term investments	4.5
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	15.0

Assuming an enterprise value multiple of 3.2×, the company's market capitalization (in INR millions) is *closest* to:

A 28.5.

B 37.5.

C 33.0.

B is correct. Enterprise value (EV) = EBITDA × EV multiple = 15 × 3.2 = 48.

$$\begin{aligned}\text{Market capitalization} &= \text{EV} - \text{Market value (MV) of debt} - \text{MV of preferred stock} + \text{Cash and short-term investments}\\ &= 48 - 10 - 5 + 4.5\\ &= 37.5.\end{aligned}$$

A is incorrect. It subtracts cash and short-term investments instead of adding them.

$$= 48 - 10 - 5 - 4.5 = 28.5$$

C is incorrect. It ignores cash and short-term investments.

$$\text{Enterprise Value (EV)} = \text{EBITDA} \times \text{EV multiple} = 15 \times 3.2 = 48$$

$$\begin{aligned}\text{Market capitalization} &= \text{Enterprise value} - \text{MV of debt} - \text{MV of preferred stock} - \text{cash and short-term investments}\\ &= 48 - 10 - 5\\ &= 33\end{aligned}$$

Equity Valuation: Concepts and Basic Tools
LOS k
Section 5.4

84 Which of the following statements concerning the use of industry analysis is most accurate? Industry analysis is *most* useful for:

A sector allocations in passive equity portfolios.

B portfolio performance attribution.

C evaluating market efficiency.

B is correct. Portfolio performance attribution, which addresses the sources of a portfolio's returns, usually in relation to the portfolio's benchmark, includes industry or sector selection. Industry classification schemes play a role in such performance attribution.

A is incorrect. Industry analysis is used for identifying active equity investment opportunities, not passive allocation.

C is incorrect. Key determinants of the forms of market efficiency are types of available information that is reflected in market prices.

Introduction to Industry and Company Analysis
Sections 1–2
LOS a

85 An equity portfolio manager is evaluating her sector allocation strategy for the upcoming year. She expects the global economy to experience a slowdown period for the next two years. Furthermore, she believes that companies will be facing diminishing growth rates with respect to revenues and profits. On the basis of these beliefs, the portfolio manager will *most likely* overweight:

A materials.

B consumer staples.

C autos.

B is correct. In periods of economic slowdowns, the manager would tend to overweight in non-cyclical companies, such as consumer staples.

A is incorrect. The materials sector tends to exhibit a relatively high degree of economic sensitivity.

C is incorrect. The telecommunication sector exhibits less economic sensitivity, so it should be overweighted, not underweighted.

Introduction to Industry and Company Analysis
LOS c
Section 3.2

86 Companies pursuing cost leadership will *most likely*:

A invest in productivity-improving capital equipment.

B establish strong market research teams to match customer needs with product development.

C engage in defensive pricing when the competitive environment is one of high rivalry.

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

B is incorrect. Establishing strong market research teams to match customer needs with product development is appropriate for companies pursuing a differentiation strategy.

C is incorrect. Defensive pricing is appropriate when the competitive environment is one of low rivalry, not high.

Introduction to Industry and Company Analysis
LOS k
Section 6

87 After the public announcement of the merger of two firms, an investor makes abnormal returns by going long on the target firm and short on the acquiring firm. This *most likely* violates which form of market efficiency?

A Semi-strong-form only

B Semi-strong-form and strong-form

C Weak-form and semi-strong-form

B is correct. In a semi-strong-form efficient market, prices adjust quickly and accurately to new information. In this case, prices would quickly adjust to the merger announcement, and if the market is a semi-strong-form efficient market, investors acting after the merger announcement would not be able to earn abnormal returns. Therefore, the market is not semi-strong-form efficient. A market that is not semi-strong-form efficient is also not strong-form efficient. Thus, violating the semi-strong-form efficiency also implies violating the strong-form efficiency. However, the market could still be weak-form efficient because past prices are not being used to make abnormal profits. Thus, we cannot say that the weak-form market efficiency has been violated.

A is incorrect. A market that is not semi-strong-form efficient is also not strong-form efficient. Thus, violating the semi-strong-form efficiency also implies violating the strong-form efficiency.

C is incorrect. The market could still be weak-form efficient, as past prices are not being used to make abnormal profits. Thus, we cannot say that the weak-form market efficiency has been violated.

Market Efficiency
LOS d
Section 3.2

88 Which of the following statements is *most* accurate concerning a short position of 100 shares of a stock at $50 per share?

A Maximum loss of $5,000

B Maximum gain of $5,000

C Unlimited maximum gain

B is correct. The potential gains on a short position are limited to no more than 100%; the potential losses are unbounded. The lowest market price per share an investor can repurchase the stock to return to the security's lender is $0, so the maximum gain is ($50 – $0) × 100 = $5,000.

A is incorrect. The potential losses are unbounded because the market price that an investor can repurchase the stock to return to the security's lender can go up with no limit. If the stock goes from $50 to $135 per share the loss would be $8,500.

C is incorrect. The potential gains on a short position are limited to no more than 100%: ($50 – $0) × 100 = $5,000.

Market Organization and Structure
LOS e
Section 5.1

89 The following data pertain to a margin purchase of a stock:

Purchase price	$50/share
Sale price	$55/share
Shares purchased	500
Margin	45%
Call money rate	6%
Dividend	$1.80/share
Commission on purchase and sale	$0.05/share

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

A 22.4%.

B 14.4%.

C 19.4%.

A is correct.

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

B is incorrect. It ignores the dividend received.

Proceeds on sale: $55 × 500	$27,500
Payoff loan: $50 × 500 × 0.55	–$13,750
Margin interest paid: $13,750 × 0.06	–$825
Dividend received: $1.80 × 500	Ignored
Sales commission paid: $0.05 × 500	–$25
Remaining equity	$12,900
Initial Investment: ($50 × 500 × 0.45) + ($0.05 × 500)	$11,275
Return on the initial investment: ($12,900 – $11,275)/$11,275	**14.4%**

C is incorrect. It switches the percentages between margin and loan.

Proceeds on sale: $55 × 500	$27,500
Payoff loan: $50 × 500 × 0.45	–$11,250
Margin interest paid: $11,250 × 0.06	–$675
Dividend received: $1.80 × 500	$900
Sales commission paid: $0.05 × 500	–$25
Remaining equity	$16,450

Initial Investment: ($50 × 500 × 0.55) + ($0.05 × 500)	$13,775
Return on the initial investment: ($16,450 – $13,775)/$13,775	**19.4%**

Market Organization and Structure
LOS f
Section 5.2

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

A Allocational

B Informational

C Operational

B is correct. Accounting standards and reporting requirements that allow meaningful and timely financial disclosures reduce the costs of obtaining fundamental information and thereby allow analysts to form more accurate estimates of fundamental values. They support informationally efficient markets.

A is incorrect. Allocational efficiency refers to making resources available where they are most valuable.

C is incorrect. Operational efficiency relates to the costs of arranging trades, which can be reduced via organized exchanges, brokerages, securitization, clearing houses, and so forth.

Market Organization and Structure
LOS k
Section 9

91 Which of the following statements is *most* accurate?

A Putable common shares provide benefits to both the issuing company and investors.

B Convertible preference shares are more volatile and riskier than the underlying common shares.

C Investors owning a small number of common shares would prefer statutory voting to cumulative voting.

A is correct. The put option feature facilitates raising capital because the shares are more appealing to investors. As such, it provides a benefit to the issuing company. It also helps investors limit their potential losses because they can sell the shares back to the issuing company if the market price falls below the pre-specified put price. Therefore, putable common shares are beneficial to both the issuing company and the investors.

B is incorrect. Convertible preference shares are less volatile and less risky than the underlying common shares because the dividend payments are known and more stable.

C is incorrect. Investors owning a small number of common shares would prefer cumulative voting, not statutory voting. Cumulative voting allows the investor to cast all votes in favor of a single candidate thereby increasing the chance of having her preferred candidate elected.

Overview of Equity Securities
LOS a, b, e
Section 3

92 Security market indexes can be used to calculate alphas, which are *best* described as:

A the systematic risk of a security, using the index as a proxy for the entire market.

B a measure of market sentiment.

C the difference between the return of the actively managed portfolio and the return of the passive portfolio.

C is correct. Security market indexes serve as market proxies when measuring risk-adjusted performance. Alpha, the difference between the return of the actively managed portfolio and the return of the passive portfolio, is a measure of risk-adjusted return.

A is incorrect. Beta, not alpha, measures the amount of systematic risk.

B is incorrect. The collective opinion of market participants indicates sentiment whereas alpha is a measure of risk-adjusted return.

Security Market Indexes
LOS g
Section 4.2

93 A market index has the following information:

Period	Quarterly Price Returns (%)	Dividend Income (%)	Value of Index
At the beginning of the year			1,000.00 (Base)
Quarter 1	3.0%	1.5%	
Quarter 2	2.0%	—	
Quarter 3	–5.0%	—	

By the end of Quarter 3, which of the following statements is *most* accurate?

A The value of the price return index is 998.1.

B The value of the total return index is below 1,000.

C The price return is 1.26%.

A is correct. The value of the price return index is 998.1. The value calculations for the price return index and the total return index are based on the geometrical link of the respective series of index returns as follows:

$$\text{Value of price return index, } V_{PRIT} = V_{PRI0}(1 + PR_{I1})(1 + PR_{I2}) \ldots (1 + PR_{IT})$$

Value of total return index, $V_{TRIT} = V_{TRI0}(1 + TR_{I1})(1 + TR_{I2}) \ldots (1 + TR_{IT})$

Quarter	Quarterly Price Returns (%)	Dividend Income (%)	Cumulative Value of Price Return Index at Quarter End (ending value)	Cumulative Value of Total Return Index at Quarter End (ending value)
1	3.0%	1.5%	1,000(1.03) = 1,030.00	1,000(1.045) = 1,045.00
2	2.0%	—	1,000(1.03)(1.02) = 1,050.60	1,000(1.045)(1.02) = 1,065.90
3	–5.0%	—	1,000(1.03)(1.02)(0.95) = **998.07**	1,000(1.045)(1.02)(0.95) = 1,012.61

B is incorrect because the value of the total return index at the end of Q3 is 1,012.61 which is above 1,000 *(as per calculation above)*.

C is incorrect because by the end of Q3, the total return is 1.26% whereas the price return is (0.2%) *(as per calculation above)*.

Security Market Indexes
LOS b
Section 2.2

94 In a repurchase agreement, the repo margin will be lower the:

A higher the supply of the collateral.

B higher the quality of the collateral.

C lower the demand for the collateral.

B is correct. The higher the quality of the collateral, the lower the difference between the market value of the security used as collateral and the value of the loan—that is, the repo margin.

A is incorrect because a higher supply of collateral would result in a higher repo margin.

C is incorrect because a lower demand for the collateral would result in a higher repo margin.

Fixed-Income Markets: Issuance, Trading, and Funding
LOS i
Section 7.3

95 Which of the following is *most likely* a form of internal credit enhancement?

A Letter of credit

B Surety bond

C Overcollateralization

C is correct. Overcollateralization is a form of internal credit enhancement in which more collateral is posted than is needed to obtain or secure financing. It provides an additional credit buffer in the event of default by providing more assets to repay the lender.

A is incorrect because a letter of credit is a credit line provided by a financial institution to reimburse any cash flow shortfalls from the assets backing the issue.

B is incorrect because a surety bond is a guarantee issued by a rated and regulated insurance company to reimburse investors for any losses incurred if the issuer defaults.

Fixed-Income Securities: Defining Elements
LOS b
Section 3.1.4.1

96 Which of the following bonds is *most likely* to trade at a lower price relative to an otherwise identical option-free bond?

A Convertible bond

B Putable bond

C Callable bond

C is correct. A callable bond benefits the issuer because it gives the issuer the right to redeem all (or part) of the bonds before the maturity date. Thus, the price of a callable bond will typically be lower than the price of an otherwise identical non-callable bond.

A is incorrect because a convertible bond also benefits bondholders as it gives them the right to convert the bonds into the issuer's common stock. All else being equal, the price of a convertible bond will typically be higher than the price of an otherwise identical non-convertible bond.

B is incorrect because a putable bond benefits bondholders as it gives them the right to sell the bonds back to the issuer before the maturity date. All else being equal, the price of a putable bond will typically be higher than the price of an otherwise identical non-putable bond.

Fixed-Income Securities: Defining Elements
LOS f
Section 5.1

97 Which bonds *most likely* rank the highest with respect to priority of claims?

A Subordinated debt

B Second lien debt

C Senior unsecured bond

B is correct. Second lien debt has a secured interest in the pledged assets and ranks higher than the unsecured debt, such as senior unsecured bonds and subordinated debt.

A is incorrect because subordinated debts are the lowest rank among those three.

C is incorrect because senior unsecured bonds are a type of unsecured claim. They rank lower than second lien debts, which are secured claims to the pledged assets.

Fundamentals of Credit Analysis
LOS b
Section 3.2

98 Which of the following is *least likely* a component of the "Four Cs of Credit Analysis" framework?

A Covenants

B Competition

C Collateral

B is correct. The "Four Cs of Credit Analysis" framework includes capacity, collateral, covenants, and character. Competition is not one of the components.

A is incorrect because covenants are the terms and conditions of lending agreements that the issuer must comply with. It is part of the "Four Cs of Credit Analysis" framework.

C is incorrect because collateral refers to the quality and value of the assets supporting the issuer's indebtedness. It is part of the "Four Cs of Credit Analysis" framework.

Fundamentals of Credit Analysis
LOS e
Section 5.2

99 A credit analyst observes the following information for Zeta Corp. and its industry.

	Zeta Corp.	Industry Median
Return on capital (%)	19.0%	20.0%
Total debt/Total capital (%)	42.0%	15.5%
FFO/Total debt (%)	45.3%	40.0%
Total debt/EBITDA (*x*)	3.5*x*	1.2*x*
EBITDA interest coverage (*x*)	4.0*x*	7.5*x*

Based on this information, it is *most likely* that the credit risk of Zeta Corp. is:

A below its industry peers.

B similar to its industry peers.

C above its industry peers.

C is correct. The company has a similar return on capital, but it has significantly higher leverage as well as a lower EBITDA interest coverage ratio than its industry peers. It is likely that the company's credit risk will be above its industry peers.

A is incorrect because the company has significantly higher leverage as well as a lower EBITDA interest coverage ratio than the industry median, indicating that its credit risk is above its industry peers.

B is incorrect because the company has significantly higher leverage as well as a lower EBITDA interest coverage ratio than the industry median, indicating that its credit risk is above its industry peers.

Fundamentals of Credit Analysis
LOS g
Section 5.2.1

100 The absolute priority rule is *most likely* violated in a:

A bankruptcy liquidation.

B special purpose entity securitization.

C bankruptcy reorganization.

C is correct. When a company is reorganized, the strict absolute priority has not always been upheld by the courts.

A is incorrect because in liquidations, the absolute priority rule generally holds.

B is incorrect because in the case of a SPV securitization, the courts (in most jurisdictions) have no discretion to change absolute priority because the bankruptcy of a company does not affect the SPV. The SPV is considered bankruptcy remote.

Introduction to Asset-Backed Securities
LOS b
Section 3.4

101 Which statement *best* describes the risk to senior tranche investors in a collateralized debt obligation (CDO)?

A There are no triggers that require the payoff of the principal to investors.

B In default, the manager will not earn a return sufficient to payoff investors.

C Leverage inherent in the CDO transaction results in higher risk.

B is correct. In the case of defaults in collateral, there is a risk that the CDO manager will not earn a sufficient return to pay off the investors in the senior and mezzanine tranches. This will result in losses to these classes of bondholders.

A is incorrect because if the CDO manager fails to meet certain pre-specified tests, a provision is triggered that requires the payoff of the principal to the senior bond classes until the tests are satisfied.

C is incorrect because the CDO manager is using leverage to generate a return above the funding cost for the equity tranche holders. If certain pre-specified tests are not met by the CDO manager, a provision is triggered that requires the payoff of the principal to the senior bond classes until the tests are satisfied, thus deleveraging the CDO.

Introduction to Asset-Backed Securities
LOS h
Section 8.1, 8.2

102 Given two otherwise identical bonds, when interest rates rise, the price of Bond A declines more than the price of Bond B. Compared with Bond B, Bond A *most likely*:

A has a shorter maturity.

B is callable.

C has a lower coupon.

C is correct. The lower the coupon rate, the more sensitive the bond's price is to changes in interest rates.

A is incorrect because the maturity would have to be longer for Bond A relative to Bond B.

B is incorrect because when interest rates rise, the price of a callable bond will not fall as much as an otherwise option-free bond.

Introduction to Fixed-Income Valuation
LOS b
Section 2.3

103 If the yield to maturity on an annual-pay bond is 7.75%, the bond-equivalent yield is *closest* to:

A 8.05%.

B 7.90%.

C 7.61%.

C is correct. The bond-equivalent yield = $2 \times (1.0775^{0.5} - 1) = 0.07605$ or 7.61%.

A is incorrect. The bond-equivalent yield is incorrectly calculated as $[(1 + 0.0775)^2 - 1]/2 = 0.0805$ or 8.05%.

B is incorrect. The bond-equivalent yield is incorrectly calculated as $[1 + (0.0775/2)]^2 - 1 = 0.079$ or 7.90%.

Introduction to Fixed-Income Valuation
LOS f
Section 3.3

104 All else being equal, the difference between the nominal spread and the Z-spread for a non-Treasury security will *most likely* be larger when the:

A yield curve is steep.

B security has a bullet maturity rather than an amortizing structure.

C yield curve is flat.

A is correct. The main factor causing any difference between the nominal spread and the Z-spread is the shape of the Treasury spot rate curve. The steeper the spot rate curve, the greater the difference.

B is incorrect because for a bullet maturity security the nominal spread and Z-spread will be approximately the same, but it will be greater for an amortizing security.

C is incorrect because when the yield curve is flat the nominal spread and Z-spread will be approximately the same.

Introduction to Fixed-Income Valuation
LOS i
Section 5.2

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

A stays the same.

B decreases.

C increases.

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

B is incorrect because duration assumes the slope stays the same.

C is incorrect because duration assumes the slope stays the same.

Understanding Fixed-Income Risk and Return
LOS b
Section 3

106 A bond with a par value of $100 matures in 10 years with a coupon of 4.5% paid semiannually; it is priced to yield 5.83% and has a modified duration of 7.81. If the yield of the bond declines by 0.25%, the approximate percentage price change for the bond is *closest* to:

A 3.91%.

B 1.95%.

C 0.98%.

B is correct.

Approximate percentage price change = $-[7.81 \times (-0.0025)] = 0.01953$ or 1.95%

A is incorrect. This incorrectly calculated as follows:

Approximate percentage price change = $-[7.81 \times (-0.0025)] \times 2 = 0.03905$ or 3.91%

C is incorrect. This incorrectly calculated as follows:

Approximate percentage price change = $-[7.81 \times (-0.0025)]/2 = 0.00976$ or 0.98%

Understanding Fixed-Income Risk and Return
LOS i
Section 4.1

107 The value of a long position in a forward contract at expiration is *best* defined as:

A forward price agreed in the contract minus spot price of the underlying.

B spot price of the underlying minus forward price agreed in the contract.

C value of the forward at initiation minus spot price of the underlying.

B is correct. The value of a long position in a forward contract at expiration is defined as spot price of the underlying minus forward price agreed in the contract.

A is incorrect. This is the value of a short position.

C is incorrect. The value of a long position in a forward contract does not depend on the value of the forward at initiation.

Basics of Derivative Pricing and Valuation
LOS c
Section 3.1.1

108 Convenience yield is *best* described as a nonmonetary benefit of holding a(n):

A option contract.

B asset.

C forward contract.

B is correct. Convenience yield represents the nonmonetary advantage of holding the asset.

A is incorrect. Convenience yield is a benefit for the holder of the asset and not the holder of an option contract.

C is incorrect. Convenience yield is a benefit for the holder of the asset and not the holder of a forward contract.

Basics of Derivative Pricing and Valuation
LOS d
Section 2.2.5

109 A swap that involves the exchange of a fixed payment for a floating payment is *most likely* equivalent to a series of:

A off-market forward contracts.

B forward contracts that all have an initial positive value.

C forward contracts that all have an initial value equal to the fixed payment.

A is correct. Because the cost of carrying an asset over different time periods will vary, the values of the implicit forward contracts embedded in the swap will not be equal: some may be positive, and some may be negative. Off-market forward contracts satisfy this condition because they can be set at any value.

B is incorrect. Because the initial market value of the swap is zero by definition, it cannot be replicated by a series of forward contracts with an initial positive value.

C is incorrect. Because the cost of carrying an asset over different time periods will vary, the prices of the implicit forward contracts embedded in the swap cannot all be equal.

Basics of Derivative Pricing and Valuation
LOS g
Section 3.3

110 Exercise of a European put option is *most likely* justified if:

A the option is out of the money.

B the exercise price exceeds the value of the underlying.

C the exercise value is negative.

B is correct. If the exercise price exceeds the value of the underlying at expiration, the option has positive exercise value and may be exercised.

A is incorrect. An out-of-the-money option should not be exercised and will expire worthless.

C is incorrect. An option that generates a negative cash flow when exercised should not be exercised.

Basics of Derivative Pricing and Valuation
LOS i
Section 4.1.1

111 At expiration, an option that is in the money will *most likely* have:

A time value, but no exercise value.

B exercise value, but no time value.

C both time value and exercise value.

B is correct. At expiration, options have no time value; if they are in the money, they have exercise value.

A is incorrect. At expiration, options have no time value.

C is incorrect. At expiration, options have no time value.

Basics of Derivative Pricing and Valuation
LOS j
Sections 4.1.3 and 4.1.4

112 For a stock that pays no dividends, the value of an American call option is *most likely*:

A the same as the value of a European call option with otherwise identical features.

B greater than the value of a European call option with otherwise identical features.

C less than the value of a European call option with otherwise identical features.

A is correct. American call prices can differ from European call prices only if the underlying stock is dividend paying. In the absence of such cash payments, European and American call options have the same value.

B is incorrect. In the absence of cash payments such as dividends, the value of European and American call options is identical.

C is incorrect. In the absence of cash payments such as dividends, the value of European and American call options is identical.

Basics of Derivative Pricing and Valuation
LOS o
Section 4.3

113 Which of the following attributes is *least likely* to be a requirement for the existence of riskless arbitrage? The underlying security:

A can be sold short.

B is a financial asset.

C is relatively liquid.

B is correct. For riskless arbitrage to exist, the underlying security that can be arbitraged may be either a financial or a non-financial security.

A is incorrect. For riskless arbitrage to exist, the underlying security must be able to be short sold.

C is incorrect. For riskless arbitrage to exist, the underlying security must be relatively liquid so it is easy to buy and sell at a low cost.

Derivative Markets and Instruments
LOS e
Section 7.2

114 Compared with long-only investments in stocks and bonds, alternative investments are *most likely* characterized by less:

A flexibility to use derivatives.

B manager specialization.

C transparency.

C is correct. Alternative investments are typically expected to have a lower level of regulation and less transparency than traditional long-only investments.

B is incorrect because alternative investments are often characterized by narrow manager specialization, as compared with traditional long-only investments.

A is incorrect because alternative investments typically give the manager more flexibility to use derivatives and leverage, invest in illiquid assets, and take short positions, as compared with traditional investments.

Introduction to Alternative Assets
LOS a
Section 2

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

A access to due diligence expertise.

B lower fees because of economies of scale.

C access to managers who can negotiate better redemption terms.

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

A is incorrect because this is an advantage of investing through funds of funds.

C is incorrect because this is an advantage of investing through funds of funds.

Introduction to Alternative Investments
LOS b
Section 3

116 Illiquidity is *most likely* a major concern when investing in:

A real estate investment trusts.

B private equity.

C commodities.

B is correct. Once a commitment in a private equity fund has been made, the investor has very limited liquidity options.

C is incorrect. The majority of commodity investments are implemented through derivatives, so liquidity is not a major concern.

A is incorrect. Real estate investment trusts are publicly listed, so liquidity is not a major concern.

Introduction to Alternative Investments
LOS d
Section 4.5

117 A real estate investor looking for equity exposure in the public market is *most likely* to invest in:

A real estate limited partnerships.

B shares of real estate investment trusts.

C collateralized mortgage obligations.

B is correct. Shares in real estate investment trusts are publicly traded and represent an equity investment in real estate.

A is incorrect. Real estate limited partnerships are an example of a private real estate investment.

C is incorrect. A collateralized mortgage obligation is an example of debt-based exposure to real estate.

Introduction to Alternative Investments
LOS d
Section 5.1

118 Which of the following statements concerning the historical record of alternative investments is *most likely* correct?

A The exclusion of returns of funds that have been liquidated leads to an upward bias in index performance.

B The use of appraised values instead of market prices leads to an upward bias in volatility.

C The inclusion of previous return data for funds that enter the index leads to a downward bias in index performance.

A is correct. The exclusion of returns of funds that have been liquidated is called survivorship bias. It is most likely that only poor performers are eliminated and thus reported returns are artificially inflated.

B is incorrect. The use of appraised values instead of market prices leads to a downward bias in volatility.

C is incorrect. The inclusion of previous return data for funds that enter the index is called backfill bias. It leads to an upward bias in index performance.

Introduction to Alternative Investments
LOS e
Section 2

119 High-water marks are typically used when calculating the incentive fee on hedge funds. They are *most likely* used by clients to:

A avoid prime brokerage fees.

B avoid paying twice for the same performance.

C claw back the management fees.

B is correct. High-water marks help clients avoid paying twice for the same performance. When a hedge fund's value drops, the manager will not receive an incentive fee until the value of the fund returns to its previous level.

A is incorrect because high-water marks are not linked to prime brokerage fees.

C is incorrect because management fees are paid irrespective of returns.

Introduction to Alternative Investments
LOS f
Section 3.3.1

120 The value at risk of an alternative investment is *best* described as the:

A probability of losing a fixed amount of money over a given time period.

B minimum amount of loss expected over a given time period at a given probability level.

C time period during which a fixed amount is lost at a given probability level.

B is correct. Value at risk is defined as the minimum amount of loss expected over a given time period at a given probability level.

A is incorrect. Value at risk is defined as the minimum amount of loss expected over a given time period at a given probability level.

C is incorrect. Value at risk is defined as the minimum amount of loss expected over a given time period at a given probability level.

Introduction to Alternative Investments
LOS g
Section 8.2