2019 Level I Mock Exam AM

The morning 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
1–20	Ethical and Professional Standards	30
21–32	Quant	18
33–44	Econ	18
45–62	Financial Reporting and Analysis	27
63–74	Corporate Finance	18
75–81	Portfolio Management	10.5
82–94	Equity	19.5
95–107	Fixed Income	19.5
108–114	Derivatives	10.5
115–120	Alternative Investments	9
	Total:	**180**

2019 LEVEL I MOCK EXAM AM

1 Who *most likely* determines whether a violation of the CFA Institute Code and Standards or testing policies has occurred and what sanction should be imposed? The:

A Professional Conduct Staff and the Disciplinary Review Committee

B Professional Conduct Staff

C Disciplinary Review Committee

A is correct. Both the Professional Conduct Staff and the Disciplinary Review Committee are responsible for determining whether a violation of the Code and Standards or testing policies has occurred and if so what sanction should be imposed. Following their investigation, the Professional Conduct Staff may conclude the inquiry with no disciplinary sanction, issue a cautionary letter, or continue proceedings to discipline the member or candidate which include the charges and a proposed sanction. If that proposal is rejected by the member or candidate, the matter is referred to a panel composed of DRC Members. The panel's task is to determine whether a violation of the Code and Standards or testing policies occurred and if so what sanction should be imposed.

B is incorrect. Both the Professional Conduct Staff and the Disciplinary Review Committee are responsible for determining whether a violation of the Code and Standards or testing policies has occurred and if so what sanction should be imposed.

C is incorrect. Both the Professional Conduct Staff and the Disciplinary Review Committee are responsible for determining whether a violation of the Code and Standards or testing policies has occurred and if so what sanction should be imposed.

Code of Ethics and Standards of Professional Conduct
LOS a

2 Holly Baker, CFA is explaining the CFA Institute Code of Ethics to a client. Which of the following statements could Baker make to *most likely* reflect disciplinary sanctions the CFA Institute may impose? Sanctions include:

A fines for violations.

B revocation of membership.

C banishment from the industry.

B is correct as the CFA Institute may revoke membership for violations of the Institute Code of Ethics.

A is incorrect because CFA Institute Bylaws do not include fines as a sanction.

C is incorrect as CFA Institute does not have the authority to ban an individual from the business and does not always apply sanctions to every violation of its Code.

Code of Ethics and Standards of Professional Conduct
LOS a

3 William Wong, CFA, is an equity analyst with Hayswick Securities. Based on his fundamental analysis, Wong concludes that the stock of a company he follows, Nolvec Inc., is substantially undervalued and will experience a large price increase. He delays revising his recommendation on the stock from "hold" to "buy" to allow his brother to buy shares at the current price. Wong is *least likely* to have violated the CFA Institute Standards of Professional Conduct related to:

A duty to clients.

B reasonable basis.

C priority of transactions.

B is correct because there is nothing to suggest that Wong does not have a reasonable basis for his conclusion related to Nolvec [Standard V(A)].

A is incorrect because by delaying the revision of his recommendation so that his brother can buy shares at a lower price, he has violated the CFA Institute Standards relating to duty to clients [Standard III(A), Standard VI(B)].

C is incorrect because by delaying the revision of his recommendation so that his brother can buy shares at a lower price, he has violated the CFA Institute Standards relating to priority of transactions [Standard III(A), Standard VI(B)].

Guidance for Standards I–VII
LOS a
Standard III(A)–Loyalty, Prudence, and Care, Standard VI(B)–Priority of Transactions, Standard V(A)–Diligence and Reasonable Basis

4 Hui Chen, CFA, develops marketing materials for an investment fund he founded three years ago. The materials show the 3-year, 2-year, and 1-year returns for the fund. He includes a footnote that states in small print "Past performance does not guarantee future returns." He does not claim compliance with GIPS in the disclosures or footnotes. He also includes a separate sheet showing the most recent semi-annual and quarterly returns, which notes that they have been neither audited nor verified. Has Chen *most likely* violated any CFA Institute Standards of Professional Conduct?

A No.

B Yes, because he included un-audited and unverified results.

C Yes, because he did not adhere to the Global Investment Performance standards.

A is correct because the Standards require members to make reasonable efforts to make sure performance information is fair, accurate, and complete. The Standards do not require compliance with Global Investment Performance Standards (GIPS), auditing, or verification requirements [Standard III(D)].

B is incorrect because the Standards do not require that results be audited or verified unless claiming compliance with GIPS.

C is incorrect because the Standards do not require compliance with GIPS.

Guidance for Standards I–VII
LOS a

5 Charlie Mancini, CFA, is the Managing Director for Business Development at SV Financial (SVF), a large US-based mutual fund organization. Mancini has been under pressure recently to increase revenues. In order to secure business from a large hedge fund manager based in Asia, Mancini recently approved flexible terms for the fund's client agreement. To allow for time zone differences, the agreement permits the hedge fund to trade in all of SVF's mutual funds six hours after the close of US markets, which is prohibited by US regulators. Did Mancini violate any CFA Institute Standards of Professional Conduct?

A No.

B Yes, with regard to Fair Dealing.

C Yes, with regard to Fair Dealing and Material Nonpublic Information.

C is correct because clients should be treated fairly and impartially [Standard III(B)]. In addition, the flexible trading terms allow the hedge fund manager to enrich themselves and is a violation of Standard II(A), concerning trading on material nonpublic information. This is also a conflict of interest [Standard VI(A)–Disclosure of Conflicts].

A is incorrect because violations of several Standards have occurred.

B is incorrect because a violation of the Fair Dealing standard has occurred.

Guidance for Standards I–VII
LOS a
Standard II(A)–Material Nonpublic Information, Standard III(B)–Fair Dealing, Standard VI(A)–Disclosure of Conflicts

6 Ricardo Torres, CFA, is a well-respected telecommunications analyst for Pegasus Advisers. He is known for his thorough analysis, including interviews with suppliers, customers, and competitors. Torres has a strong following, and his research reports can often materially affect the market. As a result, Pegasus limits the distribution of his reports to Pegasus clients. After losing market share to Pegasus for over two years, Marco Rodrigo, a CFA candidate, reports Torres to the local securities regulator on suspicion of using insider information to make share recommendations. What CFA Institute Standard of Professional Conduct has Rodrigo *most likely* violated?

A Misconduct

B Material Nonpublic Information

C Market Manipulation

A is correct. Rodrigo has likely violated Standard I(D)–Misconduct by behaving in an unprofessional manner that reflects adversely on his professional integrity by reporting Torres to the regulator when there is no apparent evidence Torres is using material nonpublic information. Torres is a well-respected analyst known for his in-depth, thorough analysis using a mosaic process. It appears Rodrigo only reported Torres to harm his reputation in order to recapture the market share he has lost over the last two years. There is no evidence Torres manipulated the market through his research. The research is used for the benefit of the Pegasus clients. Although the public may consider Torres' reports to be material because of the fact that their release can move the market, it does not mean the report must be made available to the public prior to the release of the report to Pegasus clients.

B is incorrect because there is no evidence Torres manipulated the market through his research. The research is used for the benefit of the Pegasus clients.

C is incorrect because while the public may consider Torres reports to be material due to the fact that their release can move the market, it does not mean the report must be made available to the public prior to the release of the report to Pegasus clients.

Guidance for Standards I–VII
LOS a
Standard I(D)–Misconduct, Standard II(A)–Material Nonpublic Information, Standard II(B)–Market Manipulation

7 Albert Nyakenda, CFA, was driving to a client's office where he was expected to close a multi-million-dollar deal when he was pulled over by a traffic policeman although he did not believe he had violated any traffic laws. When Nyakenda realized the policeman planned to wrongly ticket him for speeding, he offered to buy him "lunch" so that he could quickly get to his client's office. The lunch would cost significantly more than the ticket. The alternative was to go to the police station and file a complaint of being wrongly accused that would also involve going to court the next day to present his case. Did Nyakenda *most likely* violate the CFA Code of Ethics?

A Yes.

B No, because he was wrongly accused.

C No, because the cost of lunch is more than the ticket.

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

B is incorrect because Nyakenda does not have the authority to determine whether he was wrongly accused. That is his opinion, not based on fact or in a court of law. He must obey the laws of the country within which he resides and works and act with integrity and in an ethical manner.

C is incorrect because he must obey the laws of the country within which he resides and works and does not have the jurisdictional power to determine whether his "punishment" is just. Nyakenda must act with integrity and in an ethical manner.

Guidance for Standards I–VII
LOS a, b

8 Francesca Ndenda, CFA, and Grace Rutabingwa work in the same department for New Age Managers with Rutabingwa reporting to Ndenda. Ndenda learns that Rutabingwa received a Notice of Enquiry from the Professional Conduct Program at CFA Institute regarding a potential cheating violation when he sat for the CFA exam in June. As Rutabingwa's supervisor, Ndenda is afraid the behavior of Rutabingwa will be seen as a violation of the CFA Code and Standards. Does Ndenda *most likely* have cause for concern?

A Yes.

B No, because her responsibilities do not apply.

C No, not until Rutabingwa is found guilty of cheating.

B is correct because a supervisor's responsibilities relate to detecting and preventing violations by anyone subject to their supervision or authority regarding activities they supervise. Ndenda had no way of detecting and/or preventing Rutabingwa from cheating during the CFA exam, if in fact that is what he did, an event she did not attend.

A is incorrect because Ndenda does not have supervisory responsibility for Rutabingwa when he takes his CFA exam.

C is incorrect because supervisor responsibility in this case does not apply, as Rutabingwa was not under the supervision of Ndenda when he took the CFA exam.

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

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

A No.

B Yes, because returns are lower than expected by the Partners.

C Yes, because he did not disclose the increased costs to his Partners.

A is correct because no violation took place. Erobo was not required to inform the Limited Partners about the increase in lighting fixture cost as the increase would not cause the overall project cost to escalate higher than the 15% budget variance contingency agreed within the partnership.

B is incorrect because Erobo did not make any promises regarding the return of the project.

C is incorrect because Erobo was not required to inform the Limited Partners regarding the increase in lighting fixture cost since the increase would not cause the overall project cost to escalate higher than the 15% budget variance agreed within the partnership allowing Erobo a 20% equity stake.

Guidance for Standards I–VII
Standard I(C)–Misrepresentation
LOS a, b

10 Danielle Deschutes, CFA, is a portfolio manager who is part of a 10-person team that manages equity portfolios for institutional clients. A competing firm, South West Managers, asks Deschutes to interview for a position within its firm and to bring her performance history to the interview. Deschutes receives written permission from her current employer to bring the performance history of the stock portfolio with her. At the interview, she discloses that the

performance numbers represent the work of her team and describes the role of each member. To bolster her credibility, Deschutes also provides the names of institutional clients and related assets constituting the portfolio. During her interview Deschutes *most likely* violated the CFA Institute Standards of Professional Conduct with regards to:

A the stock portfolio's performance history.

B her contribution to the portfolio's returns.

C providing details of the institutional clients.

C is correct because Deschutes most likely violated Standard III(E)–Preservation of Confidentiality by failing to preserve the confidentiality of client records when she disclosed specific details about clients in the equity portfolio.

A is incorrect because Standard III(D)–Performance Presentation does not prohibit showing past performance of funds managed at a prior firm as part of a performance track record as long as showing that record is accompanied by appropriate disclosures about where the performance took place and the person's specific role in achieving that performance, which has been done in this case.

B is incorrect because the specific role the portfolio manager played in achieving the performance and the portion of the return that she was directly responsible for should be disclosed as required by Standard III(D)–Performance Presentation. Deschutes explains that the performance was a team effort and there is no indication she tried to exaggerate her role in obtaining the performance nor did she specifically state a return she was directly responsible for which would be difficult to determine as a member of a team.

Guidance for Standards I–VII
LOS b

11 Sheila Schleif, CFA, is an equity analyst at an investment banking division of Mokara Financial Group, a full service financial group. Schleif uses a multi-factor computer model to make stock recommendations for all clients of Mokara. Schleif discovers that the model contains an error. If the error were corrected, her most recent buy recommendation communicated to all clients would change to a sell. Schleif corrects the error, changing the buy to a sell recommendation, and then simultaneously distributes via e-mail the revision to all investment banking clients who received the initial recommendation. A week later, Schleif sells the same shares she held in her personal portfolio. Concerning her actions, Schleif *most likely* violated which of the following CFA Institute Standards of Professional Conduct?

A Fair Dealing

B Priority of Transactions

C Diligence and Reasonable Basis

A is correct because the analyst violated Standard III(B)–Fair Dealing by selectively distributing the recommendation only to investment banking clients despite being responsible for making investment recommendations to all group clients. Schleif should distribute the change in recommendation to all clients who received the initial recommendation, not just those within the investment banking division of the group.

B is incorrect because Schleif did not violate Standard VI(B)–Priority of Transactions as she did not conduct transactions in her personal account until a week after the changed recommendation was distributed to clients.

C is incorrect as now that the coding error is corrected the analyst has a reasonable basis for changing her recommendation as required by Standard V(A)–Diligence and Reasonable Basis.

Guidance for Standards I–VII
LOS b

12 Heidi Katz is a CFA candidate and an analyst at a pension consulting firm. Her father is a major shareholder and managing director at Saturn Partners, a large hedge fund. When assisting in an alternative manager search for a pension client, Katz plans to recommend Saturn's market-neutral strategy because she feels it meets all of the pension plan's criteria. Given this situation, the best course of action for Katz is to:

A not present this strategy to the client and recommend another strategy.

B disclose the potential conflict to the pension client when discussing this recommendation.

C disclose the potential conflict to her employer and follow their guidance regarding disclosure of her relationship to the client.

B is correct because Standard VI(A) requires disclosure of conflicts but does not prohibit members from making recommendations as long as the potential conflicts are appropriately disclosed.

A is incorrect because if Katz believes the Saturn strategy is the best available choice she can make this recommendation, but she must disclose the relationship with her father's fund.

C is incorrect because even if her employer guides Katz not to disclose a potential conflict, she must still disclose any reasonable influences on her objectivity when making a recommendation to a client or prospective client.

Guidance for Standards I–VII
LOS c
Standard VI(A)–Disclosure of Conflicts

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

A Decline to accept the new position

B Accept the position and revise the marketing material

C Accept the position and inform senior management of inadequate compliance procedures

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

B is incorrect because Inkster should bring the improper marketing material to the attention of the firm's senior managers and recommend corrective action before taking the position.

C is incorrect because Inkster should bring the inadequate compliance system to the attention of the bank's senior managers and recommend corrective action be taken before accepting the position.

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

14 Suni Kioshi, CFA, is an analyst at Pacific Asset Management, where she covers small capitalization companies. On her own time, Kioshi often speculates in low price thinly traded stocks for her own account. Over the last three months, Kioshi has purchased 50,000 shares of Basic Biofuels Company giving her a 5% ownership stake. A week after this purchase, Kioshi is asked to write a report on stocks in the biofuels industry with a request to complete the report within two days. Kioshi wants to rate Basic as a "buy" in this report but is uncertain how to proceed. Concerning the research report, what action should Kioshi *most likely* take to prevent violating any of the CFA Institute Code of Ethics and Standards of Professional Conduct?

A Sell her shares.

B Don't recommend a buy.

C Disclose her stock ownership.

C is correct because the manager's ownership stake is a potential conflict of interest, which should be disclosed as required by Standard VI(A)–Disclosure of Conflicts, but there is no requirement to sell the shares. As long as the analyst has completed a well-informed investment recommendation consistent with Standard (V)–Diligence and Reasonable Basis and disclosed her ownership position, she could include the buy recommendation in her report.

A is incorrect because the manager's ownership stake is a potential conflict of interest, which should be disclosed as required by Standard VI(A)–Disclosure of Conflicts, but there is no requirement to sell the shares.

B is incorrect because as long as the analyst has completed a well-informed investment recommendation consistent with Standard (V)–Diligence and Reasonable Basis and disclosed her ownership position, she could include the buy recommendation in her report.

Guidance for Standards I–VII
LOS c
Standard VI(A)–Disclosure of Conflicts

15 Wang Dazong, CFA, is a sole proprietor investment advisor. Dazong believes in putting his money at risk along with his clients and trades the same securities as his clients. In order to ensure fair treatment of all accounts, he rotates trade allocations so that each account has an equal likelihood of receiving a fill on their orders. This allocation procedure also applies to Dazong's own account. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, the allocation procedure used by Dazong:

A complies with the Standards.

B requires revision to ensure client trades take precedence.

C should be disclosed and written approval received from clients.

B is correct because Standard VI(B)–requires client transactions to be given precedence over transactions made on behalf of the member's or candidate's firm or personal transactions. Because the advisor trades alongside his clients and allocates trades on a rotating basis, there are times when the advisor's trades will receive priority over his clients in violation of the Code and Standards. A member or candidate having the same investment positions or being co-invested with clients does not always create a conflict. Some clients in certain investment situations require members or candidates to have aligned interests. Personal investment positions or transactions of members or candidates or their firms should never, however, adversely affect client investments.

A is incorrect because the trade allocation procedure does not meet the requirements of Standard VI(B), which requires client transactions to be given precedence over transactions made on behalf of the member's or candidate's firm or personal transactions.

C is incorrect because even though trade allocation procedures should be disclosed to clients, in this case the procedure fails to meet the requirement of the Code and Standards, so disclosure is not sufficient and the procedures should be revised.

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

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

A strengthening of internal controls.

B participation in competitive bidding.

C elimination of in-depth due diligence for investors.

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

A is incorrect because compliance with GIPS standards may strengthen internal controls.

B is incorrect because compliance with GIPS standards enables a firm to participate in competitive bids against other compliant firms throughout the world.

Introduction to the Global Investment Performance Standards (GIPS)
LOS a
Section 1.3

17 Firms claiming GIPS compliance must make every reasonable effort to provide a compliant presentation to which of the following?

A Existing clients

B Prospective clients

C Both existing and prospective clients

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

A is incorrect because firms are not required to provide a complaint presentation to existing clients, only prospective clients. However, it is a recommendation that existing clients receive at least annually a compliant presentation.

C is incorrect because firms are not required to provide a complaint presentation to existing clients, only prospective clients. However, it is a recommendation that existing clients receive at least annually a compliant presentation.

Global Investment Performance Standards (GIPS)
LOS a
GIPS Requirement 0.A.9

18 A research analyst is facing a moral dilemma and decides to use an ethical decision-making framework. After looking at the facts at hand and identifying the situational influences, he still cannot make a decision on the best course of action. His *least* appropriate next step is to:

A determine what additional information is needed.

B decide, act, monitor, and reflect.

C ask someone else to give guidance.

B is correct. The least appropriate action would be for the decision maker to go ahead and make a decision based on insufficient information. By doing so, the decision maker could cause harm and make the situation worse. The ethical decision-making framework is iterative, and users can move between phases rather than undertaking them in any one order. If a decision maker is not yet ready to make a decision, the most appropriate course of action would be to ask someone else to give guidance and determine what additional information is needed to clarify the situation.

A is incorrect. If a decision maker is not yet ready to make a decision the most appropriate course of action would be to ask someone else to give guidance and determine what additional information is needed to clarify the situation.

C is incorrect. If a decision maker is not yet ready to make a decision the most appropriate course of action would be to ask someone else to give guidance and determine what additional information is needed to clarify the situation.

Ethics and Trust in the Investment Profession
LOS f
Section 7

19 How does ethical conduct *most likely* compare with what is legally required?

A Ethical conduct goes beyond what is legally required.

B There are no differences between the two; they are the same.

C Doing what is legally required removes the need for ethical conduct.

A is correct. Ethical conduct goes beyond what is legally required and encompasses what most societies, communities, and professional organizations consider to be ethically correct behavior. Good ethical judgement requires considering the interests of a multiple of stakeholders while minimizing their risks.

B is incorrect. While there is an overlap where ethical conduct and doing what is legally required may be the same, many instances exist where they are not.

C is incorrect. Doing what is legally required does not displace the need for ethical conduct. There are instances in the investment industry where an individual's conduct may be legal, but also considered unethical.

Ethics and Trust in the Investment Profession
LOS e
Section 6

20 The goals of the CFA Institute Code of Ethics would *least likely* include:

A publicly communicating established principles.

B addressing past ethical failings.

C fostering public confidence.

B is correct. Addressing past ethical failings is not a goal of the CFA Institute Code of Ethics. Fostering public confidence and publicly communicating established principles are both goals of the CFA Institute Code of Ethics.

A is incorrect. A goal of the CFA Institute Code of Ethics would include publicly communicating established principles.

C is incorrect. A goal of the CFA Institute Code of Ethics would include fostering public confidence.

Ethics and Trust in the Investment Profession
LOS b
Section 3

21 A nonparametric test is *most* appropriate when:

A comparing differences between means.

B data are given in ranks.

C data meet distributional assumptions.

B is correct. A nonparametric test is used under three circumstances: 1) when the data do not meet distributional assumptions, 2) when the data are given in ranks, and 3) when the hypothesis does not concern a parameter.

A is incorrect because tests related to differences between means concern a parameter. Nonparametric tests are used when the data do not concern a parameter or the data do not meet distributional assumptions.

C is incorrect because when the data meet distributional assumptions, a parametric test is used instead of a nonparametric test.

Hypothesis Testing
LOS k
Sections 3.2, 3.3, 4.1, 4.2, 5

22 The bank discount yield of a $100,000 US Treasury bill with 90 days until maturity is 4.60%. The selling price of this bill is *closest* to:

A $98,863.

B $98,866.

C $98,850.

C is correct. Use the bank discount yield formula $r_{BD} = \frac{D}{F} \times \frac{360}{t}$, where

r_{BD} = 0.046 and is the annualized yield on a bank discount basis
F = $100,000 and is the face value of the Y-bill
t = 90 and is the number of days remaining to maturity

The dollar discount, $D = r_{BD} \times F \times (t/360) = 0.046 \times \$100{,}000 \times (90/360) = \$1{,}150$.
The selling price = $100,000 – $1,150 = $98,850.

A is incorrect. The yield is calculated based on the current selling price, rather than the future amount to be received, i.e., $r_{BD} = \frac{F - S}{S} \times \frac{360}{t}$, where S is the current selling price, and F = 100,000.

$$0.046 = (100{,}000 - S)/S \times 360/90$$

$$S = \$98{,}863$$

B is incorrect. It is calculated using 365-day instead of 360-day, $D = 0.046 \times 100{,}000 \times (90/365) = \$1{,}134$. The selling price = $100,000 – $1,134 = $98,866.

Discounted Cash Flow Applications
LOS e
Section 4

23 When considering two mutually exclusive capital budgeting projects with conflicting rankings—one has a higher positive net present value (NPV), the other has a higher internal rate of return (IRR)—the *most* appropriate conclusion is to choose the project with the:

A higher NPV.

B higher IRR.

C shorter payback.

A is correct. The project with the higher NPV should be undertaken because NPV measures the increase in wealth as a result of taking the project. For mutually exclusive projects, IRR may give incorrect decisions as a result of scale and/or cash flow timing effects. Payback is not an economically sound method for evaluation of capital projects.

B is incorrect. When IRR and NPV conflict in ranking, the higher NPV project is chosen.

C is incorrect. Payback suffers from severe deficiencies as a decision tool. In particular, because it is not economically sound, the payback period should not be used to evaluate projects.

Discounted Cash Flow Applications
LOS b
Section 2.3
Capital Budgeting
LOS e
Sections 4.3, 4.8

24 A Type I error is *best* described as the probability of:

A failing to reject a false null hypothesis.

B rejecting a true alternative hypothesis.

C rejecting a true null hypothesis.

C is correct. A Type I error is the mistake of rejecting the null hypothesis when it is, in fact, true.

A is incorrect. This is the definition of a Type II error.

B is incorrect. This is an entirely wrong statement and it is not one of possible outcomes when we test a null hypothesis.

Hypothesis Testing
LOS c
Section 2

25 The joint probability of returns for securities A and B are as follows:

Joint Probability Function of Security A and Security B Returns (Entries Are Joint Probabilities)

	Return on Security B = 30%	Return on Security B = 20%
Return on Security A = 25%	0.60	0
Return on Security A = 20%	0	0.40

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

A 12.

B 14.

C 13.

A is correct. First calculate the expected returns on securities A and B with the formula:

$$E(X) = \sum_{i=1}^{n} P(X_i)X_i$$

Expected return on security A = 0.6 × 25% + 0.4 × 20% = 15% + 8% = 23%
Expected return on security B = 0.6 × 30% + 0.4 × 20% = 18% + 8% = 26%
Then calculate the covariance of returns between securities A and B with the formula:

$$\text{Cov}(R_A,R_B) = \sum_i \sum_j P\left(R_{A,i},R_{B,j}\right)\left(R_{A,i} - ER_A\right)\left(R_{B,j} - ER_B\right)$$

where

R_A and R_B = the returns on securities A and B, respectively
P = the joint probability
ER_A and ER_B = the expected returns of securities A and B, respectively
i and *j* = the line and column of the joint probability function table above

$$\begin{aligned}\text{Cov}(R_A,R_B) &= 0.6\left[(25-23)(30-26)\right] + 0.4\left[(20-23)(20-26)\right]\\ &= 0.6\left[2\times 4\right] + 0.4\left[(-3)(-6)\right]\\ &= 0.6\times 8 + 0.4\times 18\\ &= 4.8 + 7.2\\ &= 12\end{aligned}$$

B is incorrect. In the covariance calculation, it uses the joint probabilities in the wrong positions:

$$\begin{aligned}\text{Cov}(R_A,R_B) &= 0.4\left[(25-23)(30-26)\right] + 0.6\left[(20-23)(20-26)\right]\\ &= 0.4\left[2\times 4\right] + 0.6\left[(-3)(-6)\right]\\ &= 0.4\times 8 + 0.6\times 18\\ &= 3.2 + 10.8\\ &= 14\end{aligned}$$

C is incorrect. In the covariance calculation, it uses a joint probability of 0.5:

$$\begin{aligned}\text{Cov}(R_A,R_B) &= 0.5\left[(25-23)(30-26)\right] + 0.5\left[(20-23)(20-26)\right]\\ &= 0.5\left[2\times 4\right] + 0.5\left[(-3)(-6)\right]\\ &= 0.5\times 8 + 0.5\times 18\\ &= 4 + 9\\ &= 13\end{aligned}$$

Probability Concepts
LOS m
Section 3

26 The number of permutations that are possible when choosing 4 objects from a total of 10 objects is *closest* to:

A 30.

B 210.

C 5,040.

C is correct. ${}_nP_r = \frac{n!}{(n-r)!}$. In this problem, 10!/(10 – 4)! = 10!/6! = 5,040.

A is incorrect; it is calculated as (10 – 4)!/4! = 6!/4! = 30.

B is incorrect; it is calculated as a combination: 10!/[(10 – 4)! × (4!)] = 10!/(6! × 4!) = 210.

Probability Concepts
LOS o
Section 4.2

27 An increase in which of the following items will *most likely* result in a wider confidence interval for the population mean?

A Reliability factor

B Sample size

C Degrees of freedom

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

B is incorrect. Increasing the sample size shrinks the confidence interval.

C is incorrect. Increasing the degrees of freedom shrinks the confidence interval.

Sampling and Estimation
LOS j
Sections 4.2, 4.3

28 The following ten observations are a sample drawn from an approximately normal population:

Observation	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Value	–31	–14	3	–18	34	20	–6	9	7	–16

The sample standard deviation is *closest* to:

A 17.56.

B 19.59.

C 18.58.

B is correct.

$$\bar{X} = \frac{\sum_{i=1}^{n} X_i}{n}$$

$$= (-31 - 14 + 3 - 18 + 34 + 20 - 6 + 9 + 7 - 16)/10$$
$$= -12.00/10 = -1.20\text{where}$$

X_i = the value of the ith observation
n = the number of observations in the sample

The sample variance is:

$$s^2 = \frac{\sum_{i=1}^{n} \left(X_i - \bar{X}\right)^2}{(n-1)}$$

The sample standard deviation is the (positive) square root of the sample variance:

Value	Deviation from Mean	Squared Deviation
–31	–31 – (–1.2) = –29.8	888.04
–14	–14 – (–1.2) = –12.8	163.84
3	3 – (–1.2) = 4.2	17.64
–18	–18 – (–1.2) = –16.8	282.24
34	34 – (–1.2) = 35.2	1,239.04
20	20 – (–1.2) = 21.2	449.44
–6	–6 – (–1.2) = –4.8	23.04
9	9 – (–1.2) = 10.2	104.04
7	7 – (–1.2) = 8.2	67.24
–16	–16 – (–1.2) = –14.8	219.04
Sum of squared deviations		3,453.60
Divided by n – 1 (10 – 1)		3,453.60/9 = 383.73
Square root		$\sqrt{383.73}$ = 19.59

A is incorrect. 17.56 is the sum of the absolute value of the deviations from mean divided by 9:

Value	Absolute deviation from mean
–31	|–31 – (–1.2)| = 29.8
–14	|–14 – (–1.2)| = 12.8
3	|3 – (–1.2)| = 4.2
–18	|–18 – (–1.2)| = 16.8
34	|34 – (–1.2)| = 35.2
20	|20 – (–1.2)| = 21.2
–6	|–6 – (–1.2)| = 4.8
9	|9 – (–1.2)| = 10.2
7	|7 – (–1.2)| = 8.2
–16	|–16 – (–1.2)| = 14.8
Sum of absolute deviations	158
Divided by n – 1 (10 – 1)	158/9 = **17.56**

C is incorrect and is calculated by dividing the sum of squared deviations by 10 rather than 9: 3,453.60/10 = 345.36 and $\sqrt{345.36}$ = **18.58.**

Statistical Concepts and Market Returns
Sections 5.1.2, 7.4
LOS e, g

29 Based on historical returns, a portfolio has a Sharpe ratio of 2.0. If the mean return to the portfolio is 20%, and the mean return to a risk-free asset is 4%, the standard deviation of return on the portfolio is *closest* to:

A 12%.

B 8%.

C 10%.

B is correct. The Sharpe ratio for a portfolio *p*, based on historical returns, is defined as

$$S_h = \frac{\bar{R}_p - \bar{R}_F}{s_p}$$

where $\bar{R}_p$ is the mean return to the portfolio, $\bar{R}_F$ is the mean return to a risk-free asset, and s_p is the standard deviation of return on the portfolio. In this instance, 2 = (20% – 4%)/s_p. Solving for s_p: s_p = (20% – 4%)/2 = 8%.

A is incorrect. It adds the risk-free rate rather than subtracting it: (20% + 4%)/2 = 12%.

C is incorrect. It fails to subtract the risk-free rate: (20%)/2 = 10%.

Statistical Concepts and Market Returns
LOS i
Section 7.8

30 Which of the following *most* accurately describes a distribution that is more peaked than normal?

A Leptokurtic

B Mesokurtic

C Platykurtic

A is correct. A distribution that is more peaked than normal is called leptokurtic.

B is incorrect. A distribution that is neither more peaked nor less peaked than normal is called mesokurtic.

C is incorrect. A distribution that is less peaked than normal is called platykurtic.

Statistical Concepts and Market Returns
LOS l
Section 9

31 A stock is declining in price and reaches a price range wherein buying activity is sufficient to stop the decline. This range is *best* described as the:

A change in polarity point.

B resistance level.

C support level.

C is correct. The support level is defined to be a low price range in which buying activity is sufficient to stop the decline in price.

A is incorrect. The question does not ask about the *breach* of a support level.

B is incorrect. Resistance is the opposite of support (price range in which selling is sufficient to stop the rise in price).

Technical Analysis
LOS c
Section 3.2

32 The stated annual interest rate is 12.75%. If the frequency of compounding is monthly, the effective annual rate (EAR) is *closest* to:

A 13.52%.

B 12.75%.

C 12.06%.

A is correct.

$$\text{EAR} = (1 + \text{periodic interest rate})^m - 1$$

where

$$m = \text{the frequency of compounding}$$
$$\text{periodic interest rate} = \text{stated annual interest rate}/m$$

In this problem: $\text{EAR} = (1 + 0.1275/12)^{12} - 1 = 0.13522 \sim 13.52\%$.

B is incorrect; it is just the stated annual rate.

C is incorrect; it wrongly uses 12.75% in the formula for EAR: $0.1275 = [1 + X/12]^{12} - 1$ and solves for X.

The Time Value of Money
LOS c
Sections 3.2, 3.3

33 Stagflation is *best* described as an economic situation involving high inflation and high:

A economic growth.

B aggregate supply.

C unemployment.

C is correct. Declines in short-run aggregate supply bring about stagflation, an economic situation with a combination of high inflation and high unemployment.

A is incorrect. Stagflation, an economic situation with a combination of high inflation and high unemployment, will put downward pressure on GDP growth (low economic growth).

B is incorrect. Declines in short-run aggregate supply bring about stagflation.

Aggregate Output, Prices, and Economic Growth
LOS j, k
Section 3.4.4

34 Assume that the nominal spot exchange rate (USD/EUR) increases by 7.5%, the eurozone price level decreases by 4%, and the US price level increases by 2.5%. The change in the real exchange rate (%) is *closest* to:

A 0.7%.

B –6.3%.

C 14.8%.

A is correct.

$$\text{Real exchange rate} = \text{Nominal spot exchange rate} \times (\text{CPI of the foreign country/CPI of the domestic country})$$

$$\text{Change in the real exchange rate} = [(1 + \text{Change in exchange rate}) \times (1 + \text{Change in price level in foreign country})]/(1 + \text{Change in price level in domestic country}) - 1$$

$$= [(1 + 7.5\%) \times (1 - 4\%)]/(1 + 2.5\%) - 1$$

$$= 0.7\%$$

B is incorrect because the change in the nominal exchange rate is not included: (1 – 4%)/(1 + 2.5%) – 1= –6.3%.

C is incorrect because the change in the price levels are inverted: [(1 + 7.5%) × (1 + 2.5%)[/(1 – 4%) – 1= 14.8%.

Currency Exchange Rates
LOS a
Section 2

35 Which of the following statements is *most* accurate based on the FX quotations in the table?

	Spot Rate	One-Year Forward Rate
USD/EUR	1.2952	1.3001

A The forward rate is trading at a discount to the spot rate by 0.0049 points.

B The euro is trading at a forward premium of 49 points.

C The US dollar is trading at a forward premium of 49 points.

B is correct. Forward premium = Forward rate – Spot rate = 1.3001 – 1.2952 = 0.0049. To convert to points, scale four decimal places—that is, multiply by 10,000 = 10,000 × 0.0049 = 49 points. Because the forward rate exceeds the spot rate for the base currency (euro), the euro is trading at a forward premium of 49 points.

C is incorrect. When the forward rate (1.3001) is higher than the spot rate (1.2952), the base currency (EUR) is said to be trading at a forward premium, not a discount, to the price currency (USD).

A is incorrect. When the forward rate (1.3001) is higher than the spot rate (1.2952), the forward points are positive, and the forward rate is said to be trading at a premium to the spot rate. The wrong number is derived from 1.3001 – 1.2952 = 0.0049. The USD/EUR is quoted to four decimal places, so it needs to be scaled up by four decimal places or multiplied by 10,000 to 49 points.

Currency Exchange Rates
LOS g
Section 3.3

36 In order to reduce a trade deficit, the government of a country experiencing full employment moves to depreciate its currency. As a result, if the country's domestic spending declines relative to income, the *most likely* mechanism that causes this to occur is the:

A income effect.

B wealth effect.

C substitution effect.

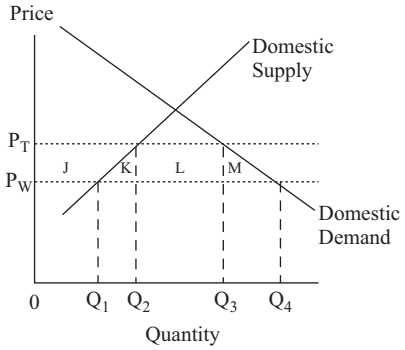
B is correct. At full employment, a weaker currency reduces the purchasing power of all domestic currency denominated assets (including the present value of current and future income). Households respond by reducing general expenditures and increasing savings. This response is the wealth effect and reflects the proportion of one's income that is saved (or spent).

A is incorrect. The income effect arises when the price of a good changes: with currency depreciation, foreign goods are more expensive, so real purchasing power (income) is reduced.

C is incorrect. The substitution effect refers to the changes in the composition of spending across different product areas. With currency depreciation, less foreign goods relative to domestic goods are purchased.

Currency Exchange Rates
LOS j
Sections 5.2
Aggregate Output, Prices, and Economic Growth
LOS h
Section 3.3.1

37 The diagram below shows the domestic demand and supply curves for a country that imports a commodity, where P_W is its world price and P_T is its domestic price after the imposition of a tariff.



The gain in government revenues arising from the imposition of the tariff is *best* described by area(s):

A L.

B J.

C K + M.

A is correct. With the imposition of the tariff, domestic supply will increase from Q_1 to Q_2, but domestic demand will fall from Q_4 to Q_3. The net amount imported will be $Q_3 - Q_2$. The change in government revenues is Area L, which is the rectangle $(Q_3 - Q_2) \times (P_T - P_W)$.

B is incorrect. It is the gain in producer surplus.

C is incorrect. It is deadweight loss.

International Trade and Capital Flows
LOS d
Section 3.1

38 An Australian firm purchases a patent for USD20,000 and machinery for USD21,500 from a US firm when the exchange rates are as follows:

	Exchange Rate
USD/EUR	1.29
AUD/EUR	1.24

The impact of these transactions on the capital account of Australia is *closest* to:

A AUD19,225.

B AUD39,891.

C AUD20,667.

A is correct. The purchase of machinery is an import and affects the current account, not the capital account, so it is ignored. The purchase of a non-produced, non-financial asset such as a patent affects the capital account.

The impact on the capital account in AUD is:

USD20,000 × (1EUR/1.29USD) × (AUD1.24/1EUR) = **19,225AUD**

C is incorrect. It includes the machinery purchase in the capital account instead of the patent.

USD21,500 × (1EUR/1.29USD) × (AUD1.24/1EUR) = 20,667

B is incorrect. It includes both machinery and patent.

USD41,500 × (1EUR/1.29USD) × (AUD1.24/1EUR) = 39,891AUD

International Trade and Capital Flows
LOS h
Section 4.2
Currency Exchange Rates
LOS d
Section 3.2

39 In theory, money neutrality holds in the long run if:

A the money supply is positively related to the velocity of circulation of money.

B increases in the money supply do not influence output and employment.

C price levels are unaffected by changes in the money supply.

B is correct. The phenomenon of money neutrality states that, in the long run, an increase in the money supply will simply lead to an increase in the price level while leaving real economic variables such as output and employment unaffected.

A is incorrect because if money neutrality holds, then an increase in the money supply will not affect real output or the speed with which money circulates. As explained by the quantity equation of exchange $M \times V = P \times Y$, with real output (Y) unaffected, there is no need for money to change hands more rapidly via increased velocity (V) with only the aggregate price level (P) rising.

C is incorrect because money neutrality states that, in the long run, price levels are affected (rather than unaffected) by an increase in the money supply, but such an increase will not affect real economic variables such as output and employment.

Monetary and Fiscal Policy
LOS d
Section 2.1.1

40 If a government increases its spending on domestically produced goods by an amount that is financed by an equivalent increase in taxes, the aggregate demand will *most likely*:

A increase.

B decrease.

C remain unchanged.

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

B is incorrect. Aggregate demand rises when the government increases spending by the same amount as it raises taxes because the marginal propensity to spend out of disposable income is less than 1, and hence for every dollar less in disposable income,

spending only falls by $c (where *c* is the marginal propensity to consume). Aggregate spending will fall less than the tax rise by a factor *c*. This additional output will, in turn, lead to further increases in income and output through the multiplier effect.

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

Monetary and Fiscal Policy
LOS p, r, s
Section 3.2.2

41 The elasticity of demand for a good is *most likely* greater when:

A a lesser proportion of income is spent on the good.

B the good is a necessity.

C the adjustment to a price change takes a longer time.

C is correct. For most goods and services, the long-run demand is much more elastic than the short-run demand. For example, if gas prices rise, consumers cannot quickly change their mode of transportation but will likely do so in the longer run.

A is incorrect. The greater the proportion of income spent on a good, the more elastic the demand.

B is incorrect. Necessities have inelastic demand.

Topics in Demand and Supply Analysis
LOS a
Section 2.2.2

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

A increase.

B remain unchanged.

C decrease.

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

The following example illustrates the direction of change.

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

Labor force participation rate = Labor force/Working-age population
Unemployment rate = Unemployed/Labor force

A is incorrect. As per the table, the unemployment rate would not increase, it would decrease. The numerator and denominator in the unemployment rate calculation are declining by the same number because the number of employed remains unchanged. Both declining by the same number will result in a smaller percentage once divided.

B is incorrect. As per the table, the unemployment rate would not remain unchanged, it would decrease. The numerator and denominator in the unemployment rate calculation are declining by the same number because the number of employed remains unchanged. Both declining by the same number will result in a smaller percentage once divided.

Understanding Business Cycles
LOS d
Section 4.1

43 The statement that is *most* consistent with real business cycle (RBC) models is that:

A persons are unemployed because their asking wages are too high.

B governments should intervene when the economy is in contraction.

C monetary variables have a major impact on GDP growth.

A is correct. As suggested particularly by the earliest RBC models, a person is unemployed because he or she is asking for wages that are too high.

B is incorrect. RBC models of the business cycle conclude that expansions and contractions represent efficient operation of the economy in response to external real shocks. Because the level of economic activity at any time is consistent with maximizing expected utility, the policy recommendation of RBC theory is for government *not* to intervene in the economy with discretionary fiscal and monetary policy.

C is incorrect. The initial New Classical models did not include money; they were called real business cycle models (often abbreviated as RBC). Cycles have real causes, such as changes in technology, whereas monetary variables, such as inflation, are assumed to have no effect on GDP and unemployment.

Understanding Business Cycles
LOS c
Section 3.3.1

44 A decrease in average weekly initial claims for unemployment is *most likely* indicative of:

A an economic recovery beginning.

B the business cycle reaching its peak.

C an economic downturn beginning.

A is correct. Average weekly initial claims for unemployment insurance is a leading indicator of economic activity, and a decrease in it is an indication of rehiring at the start of a recovery.

B is incorrect. A decrease in average weekly initial claims for unemployment is a positive leading indicator, indicating that an upturn is coming, not that a peak has been hit.

C is incorrect. A decrease in average weekly initial claims for unemployment is a positive leading indicator, indicating that an upturn is coming, not a downturn.

Understanding Business Cycles
LOS i
Section 5

45 An analyst has calculated the following ratios for a company:

Operating profit margin	17.5%
Net profit margin	11.7%
Total asset turnover	0.89 times
Return on assets (ROA)	10.4%
Financial leverage	1.46
Debt to equity	0.46

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

A 22.7%.

B 4.8%.

C 15.2%.

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

$$\begin{aligned}\text{ROE} &= \text{Net profit margin} \times \text{Asset turnover} \times \text{Financial leverage}\\ &= 11.7 \times 0.89 \times 1.46\\ &= \mathbf{15.2\%}\end{aligned}$$

$$\begin{aligned}\text{ROE} &= \text{ROA} \times \text{Financial leverage}\\ &= 10.4 \times 1.46\\ &= \mathbf{15.2\%}\end{aligned}$$

A is incorrect. It uses Operating profit margin × Asset turnover × Financial leverage = 17.5 × 0.89 × 1.46 = 22.7

B is incorrect. It uses Net profit margin × Asset turnover × Debt to equity = 11.7 × 0.89 × 0.46 = 4.8%.

Financial Analysis Techniques
LOS d
Section 4.6.2

46 The following financial data are available for a company:

Return on assets (ROA)	4.8%
Total asset turnover	1.92
Financial leverage	1.75
Dividend payout ratio	48.1%

The company's sustainable growth rate is *closest* to:

A 4.40%.

B 4.78%.

C 4.00%.

A is correct.

Sustainable growth rate = Retention ratio (b) × Return on equity (ROE)

$$\begin{aligned} b &= 1 - \text{Dividend payout ratio} \\ &= 1 - 0.481 \\ &= 0.519 \\ \text{ROE} &= \text{Return on assets} \times \text{Financial leverage} \\ &= 0.048 \times 1.75 \\ &= 0.084 \\ \text{Sustainable growth rate} &= b \times \text{ROE} \\ &= 0.519 \times 0.084 \\ &= 0.044 = 4.40\% \end{aligned}$$

B is incorrect. It uses TAT instead of FL in computing ROE.

$$\begin{aligned} b &= 1 - \text{Dividend payout ratio} \\ &= 1 - 0.481 \\ &= 0.519 \\ \text{ROE} &= \text{ROA} \times \text{Total asset turnover} \\ &= 0.048 \times 1.92 \\ &= 0.0922 \\ \text{Sustainable growth rate} &= b \times \text{ROE} \\ &= 0.519 \times 0.0922 \\ &= 0.0478 = 4.78\% \end{aligned}$$

C is incorrect. It incorrectly used dividend payout ratio (1 – b) × ROE

Dividend payout ratio = 0.481

$$\begin{aligned} \text{ROE} &= \text{ROA} \times \text{Financial leverage} \\ &= 0.048 \times 1.75 \\ &= 0.084 \\ \text{Sustainable growth rate} &= b \times \text{ROE} \\ &= 0.481 \times 0.084 \\ &= .0404 = 4.00\% \end{aligned}$$

Financial Analysis Techniques
LOS e
Sections 4.6.2, 5.1.1

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

A Higher dividend payout

B Higher tax burden

C Lower interest burden

B is correct.

Sustainable growth rate = Retention ratio × ROE

The higher a company's return on equity (ROE) and its ability to finance itself from internally generated funds (a higher retention ratio), the greater its sustainable growth rate.

In the five-factor ROE, any factor that increases ROE will increase sustainable growth:

ROE = Tax burden × Interest burden × Earnings before interest and taxes margin × Asset turnover × Leverage

A higher tax burden ratio (Net income/Earnings before tax) implies that the company can keep a higher percentage of pre-tax profits; this result implies a lower tax rate and a higher ROE.

A is incorrect. Higher retention (lower payout) increases sustainable growth.

C is incorrect. Lower interest burden means that the company has high borrowing costs, reducing pre-tax income relative to EBIT and reducing ROE and sustainable growth.

Financial Analysis Techniques
LOS c, d, e
Sections 4.6.2, 5.1
Cost of Capital
LOS h
Section 3.3.2

48 The following information is given about a company:

(€ millions)	2013	2012
Short-term borrowings	2,240	5,400
Current portion of long-term interest-bearing debt	2,000	1,200
Long-term interest-bearing debt	12,000	9,000
Total shareholders' equity	23,250	21,175
Earnings before interest and taxes (EBIT)	3,850	3,800
Interest payments	855	837
Operating lease payments	800	800

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

A improved because the debt-to-equity ratio decreased.

B improved because the fixed charge coverage ratio increased.

C deteriorated because the debt-to-equity ratio increased.

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

(€ millions)	2013	2012	Comments
Debt-to-equity ratio (total debt/equity)	(2,240 + 2,000 +12,000)/23,250 = 69.8%	(5,400 + 1,200 + 9,000)/21,175 = 73.7%	Ratio decreased; company has less financial risk and is more solvent
Fixed charge coverage (FCC) ratio = (EBIT + Lease payments)/Interest payments + Lease payments	(3,850 + 800)/(855 + 800) = 2.81	(3,800 + 800)/(837 + 800) = 2.81	No change in FCC ratio

B is incorrect. The fixed charge coverage stays the same

C is incorrect. From table above, it was shown that the solvency improved since D/E decreased. But if the candidate incorrectly uses only LTD in the ratio, the ratio does increase. See table below

	2013	2012
Short-term borrowings	2,240	5,400
Current portion of long-term interest-bearing debt	2,000	1,200
Long-term interest-bearing debt	12,000	9,000
Total shareholders' equity	23,250	21,175
Earnings before interest and taxes (EBIT)	3,850	3,800
Interest payments	855	837
Operating lease payments	800	800
Total Debt	16,240	15,600
Total Debt/Equity	0.70	0.74
Long-term interest-bearing debt/Equity	0.60	0.48
EBIT + Operating lease	4,650	4,600
Interest + Operating lease	1,655	1,6367
Fixed charge coverage (FCC) ratio	2.81	2.81
Interest coverage ratio	4.50	4.54
Debt to capital	0.41	0.42
EBIT/Interest + Operating lease	2.33	2.32

Financial Analysis Techniques
LOS b
Section 4.4
Non-Current (Long-Term) Liabilities
LOS k
Section 5

49 Private contracts, such as bank loan agreements, are *most likely* to provide an effective disciplinary mechanism to insure high financial reporting quality because:

A loan covenants require the firm to meet specific financial ratios in order to renew the loan.

B lenders monitor managers and pay close attention to the firm's financial reports.

C loan covenants may allow the lender to recover all or part of their investment if certain financial conditions are triggered.

B is correct. The monitoring role of lenders is most likely to insure high-quality financial reports because the lenders inspect financial reports carefully to be sure they are not manipulated.

A is incorrect. The need to meet specific financial ratios may motivate managers to manipulate financial reports to achieve the target ratios.

C is incorrect. The desire to avoid financial triggers may motivate managers to manipulate financial reports so that loan covenants are not violated.

Financial Reporting Quality
LOS f
Section 3.3.3

50 The International Financial Reporting Standards (IFRS) Conceptual Framework identifies fundamental qualitative characteristics that make financial information useful. Which of the following is *least likely* to be one of these characteristics?

A Faithful representation

B Relevance

C Materiality

C is correct. The two fundamental qualitative characteristics that make financial information useful are relevance and faithful representation. Materiality relates to the level of detail of the information needed to achieve relevance.

A is incorrect. The two fundamental qualitative characteristics that make financial information useful are relevance and faithful representation. Materiality relates to the level of detail of the information needed to achieve relevance.

B is incorrect. The two fundamental qualitative characteristics that make financial information useful are relevance and faithful representation. Materiality relates to the level of detail of the information needed to achieve relevance.

Financial Reporting Standards
LOS d
Section 5.2

51 Which of the following is *least likely* to be an acceptable approach for accounting standard setting bodies to use when developing accounting standards?

A Revenue/expense-based

B Objectives-oriented

C Rules-based

A is correct. The revenue/expense-based approach is a measurement approach, not a standard setting approach.

B is incorrect. An objectives-oriented approach includes both a framework of principles and appropriate levels of implementation guidance. This is a reasonable description of the approach of both IFRS and US GAAP.

C is incorrect. US GAAP has historically placed more emphasis on the rules-based approach. Standards tend to be more detailed and complex than equivalent IFRS standards. The Financial Accounting Standards Board (FASB) has been moving toward a more principles-based approach in recent years as part of the convergence effort between IFRS and US GAAP.

Financial Reporting Standards
LOS f, g
Sections 2, 6.2

52 An analyst has observed that the profit margins of a company have not increased or decreased significantly in the last few years. Which of the following is the *most* appropriate inference that can be made as to how this observation affects the company's credit risk? The company's credit risk is:

A unaffected.

B lower than otherwise.

C higher than otherwise.

B is correct. With no significant increases or decreases in margins in the last few years, the company has had stable margins. Stable margins are associated with lower credit risk.

A is incorrect: Stable margins are associated with lower credit risk than otherwise.

C is incorrect. With no significant increases or decreases in margins in the last few years, the company has had stable margins. Stable margins are generally associated with lower credit risk.

Financial Statement Analysis: Applications
LOS c
Section 4

53 If a company has a deferred tax asset reported on its statement of financial position and the tax authorities reduce the tax rate, which of the following statements is *most* accurate concerning the effect of the change? The existing deferred tax asset will:

A not be affected.

B increase in value.

C decrease in value.

C is correct. A decrease in the tax rate will result in a decrease in the previously reported amounts of deferred tax assets. That is, the value of the future tax assets, based on the new lower rate, is reduced for offsetting future tax payments.

A is incorrect. The change would affect not only the current year's reported income tax expense but also any amounts previously established on the balance sheet.

B is incorrect. The value of the future benefits decreases, not increases.

Income Taxes
LOS d, e, h
Section 3.3

54 An analyst gathers the following information about a company:

LIFO reserve as of 31 December 2013	$420,000
LIFO reserve as of 31 December 2014	$450,000
Marginal tax rate	30%

If the company had used the first-in, first-out (FIFO) method instead of last-in, first-out (LIFO), its 2014 net income would *most likely* have been:

A $9,000 higher.

B $21,000 higher.

C $30,000 lower.

B is correct.

$$\text{Change in LIFO reserve (\$ thousands)} = \text{2014 LIFO reserve} - \text{2013 LIFO reserve} = \$450 - \$420 = \$30$$

$$\text{FIFO cost of goods sold (COGS)} = \text{LIFO COGS} - \text{Change in LIFO reserve} = \text{LIFO COGS} - \$30$$

If an increase in the LIFO reserve occurs, LIFO COGS will be higher than FIFO by the amount of the increase. With a lower COGS under FIFO, pretax income will be higher by $30,000. With a lower COGS under FIFO, after-tax income will be higher by $30,000 × (1 – 0.30) = $21,000.

A is incorrect. Tax rate × change in LIFO reserve = 0.30 × ($450,000 – $420,000) = $9,000

C is incorrect. Change in the LIFO reserve = $450,000 – $420,000 = $30,000

Inventories
LOS f, e, l
Section 4.1

55 Greene Corporation uses the last-in, first-out (LIFO) inventory method, but most of the other companies in Greene's industry use first-in, first-out (FIFO). To *best* compare Greene's financial statements with its competitors', an analyst would make which of the following adjustments to Greene's ending inventory? It should be:

A increased by the LIFO reserve.

B decreased by the LIFO reserve.

C increased by the change in the LIFO reserve for that period.

A is correct. The analyst should add the ending balance in the LIFO reserve to the LIFO inventory to equal the ending balance for inventory on a FIFO basis: LIFO reserve = Inventory (FIFO) – Inventory (LIFO).

B is incorrect. Inventory (FIFO) = Inventory (LIFO) + LIFO Reserve

C is incorrect. Inventory (FIFO) = Inventory (LIFO) + LIFO Reserve

Inventories
LOS f, e, l
Section 4.1
Financial Statement Analysis: Applications
LOS e
Section 6.3

56 The following information is available for a company that prepares its financial statements in accordance with US GAAP:

- It has production facilities with a net book value of $28.4 million.
- Recently, several other companies have entered the market, and the company now estimates that it will be able to generate cash flows of only $3 million per year for the next seven years with its facilities.
- The firm has a cost of capital of 10%.

Reflecting these recent events related to its production facilities, the company's financial statements will *most likely* report (in millions) a:

A $13.8 impairment loss on the income statement.

B $7.4 reduction in the balance sheet carrying amount.

C $13.8 reduction in operating cash flows.

A is correct. The company will report an impairment loss of $13.8 million on its income statement. Under US GAAP, the facilities fail the recoverability test: the net book value cannot be recovered from undiscounted cash flows (7 years × $3 = $21 < $28.4). Therefore, the asset is impaired and should be written down to its fair value.

Fair Value is the present value (PV) of future benefits: (N = 7; i = 10; PMT = 3); PV = 14.6

Impairment Loss is Carrying value – Fair value = 28.4 – 14.6 = 13.8 to be reported on the income statement.

B is incorrect. It was determined with no discounting of future benefits, resulting in an incorrect impairment charge: 28.4 – 3 × 7 = 7.4.

C is incorrect. This is a non-cash item and does not affect cash from operations.

Long-Lived Assets
LOS i
Section 5.1

57 The following table represents selected financial statement data for a company given three different scenarios:

Year	0	1	2	3
Scenario I				
Retained Earnings	0	8,500	18,100	27,975
Common Stock	150,000	150,000	150,000	150,000

(continued)

Year	0	1	2	3
Total Shareholders' Equity	150,000	158,500	168,100	177,975
ROE (%)		5.5	5.9	
Scenario II				
Retained Earnings	0	8,142	17,359	27,975
Common Stock	150,000	150,000	150,000	150,000
Total Shareholders' Equity	150,000	158,142	167,359	177,975
ROE (%)		5.3	5.7	
Scenario III				
Retained Earnings	0	9,325	18,650	27,975
Common Stock	150,000	150,000	150,000	150,000
Total Shareholders' Equity	150,000	159,325	168,650	177,975
ROE (%)		6	5.7	

Assume the company did not have other comprehensive income, did not pay dividends, and experienced no capital contributions from shareholders.

Using the data provided in the table to calculate ROE in Year 3, in which scenario is the company *most likely* a lessee in a finance lease?

A Scenario I

B Scenario II

C Scenario III

B is correct. A company that enters into a finance lease as the lessee reports an asset (leased asset) and related debt (lease payable) on the balance sheet. On the income statement, the company reports interest expense on the debt, and if the asset acquired is depreciable the company reports depreciation expense. Return measures are typically lower in early years for a lessee in a finance lease and rise over the course of the lease, all else equal. In this case ROE is calculated as net income divided by average shareholders' equity. Scenario II is the only scenario in which the company's ROE is rising over time. In Scenario II, the company had year 3 ROE of 6.1 percent: (27,975 – 17,359)/[(177,975 + 167,359)/2].

A is incorrect because the ROE pattern is not representative of a lessee in a finance lease. In Scenario I, the company's year 3 ROE is 5.7 percent: (27,975 – 18,100)/[(177,975 + 168,100)/2].

C is incorrect because in Scenario III the company's ROE is declining over time, which is not indicative of a lessee in a finance lease. In this case, year 3 ROE is 5.4 percent: (27,975 – 18,650)/[(177,975 + 168,650)/2].

Long-Lived Assets
LOS p
Section 9.2.1

58 An advantage to the lessee in a leasing agreement is most likely:

A economies of scale in servicing assets.

B tax benefits associated with interest expense.

C lower financing costs than purchasing the asset.

C is correct. Leases can provide less costly financing for the lessee because they usually require little, if any, down payment and often are at lower fixed interest rates than those incurred if the assets were purchased.

A is incorrect because economies of scale in servicing assets is an advantage for the lessor, not the lessee.

B is incorrect because tax benefits associated with the interest expense is an advantage to the lessor, not the lessee.

Non-Current Long-Term Liabilities
LOS f
Section 2.4

59 If a company purchases, at a premium, bonds that it expects to hold until maturity, they are *most likely* measured on the balance sheet at:

A historical cost.

B amortized cost.

C fair value.

B is correct. The bonds would be a type of financial asset that is measured at amortized cost. This classification applies to financial assets whose cash flows occur on specific dates and consist solely of principal and interest, and if the entity's business model for this investment is to hold the asset to maturity.

C is incorrect. Financial assets can be measured at fair value but because the entity intends to hold these bonds to maturity, amortized cost is more likely.

A is incorrect. Some financial assets, notably loans to other companies, are measured at historical cost, but not a purchased bond.

Understanding Balance Sheets
LOS e
Section 4.5

60 An increase in which of the following items would *most likely* result in an increase in a company's quick ratio, all else being held equal?

A Current liabilities

B Receivables

C Inventory

B is correct. Because inventories are excluded from the quick ratio, holding all other variables constant, an increase in cash, marketable securities, or receivables will increase a company's quick ratio. In addition, holding all other variables constant, an increase in current liabilities will decrease a company's quick ratio.

A is incorrect. An increase in current liabilities will decrease the quick ratio.

C is incorrect. Inventory is not included in the calculation of quick ratio.

Understanding Balance Sheets
LOS h
Section 7.2
Financial Analysis Techniques
LOS b
Section 4.3.2

61 Which of the following is the *most likely* reason for an analyst to choose the direct method rather than the indirect method for analyzing a firm's operating cash flows?

A To understand the relationship between net income and operating cash flows

B To identify operating cash flows by source and by use

C To avoid making adjustments for non-cash items

B is correct. The direct method cash flow statement presents specific operating cash flows by source and use.

A is incorrect because the indirect method starts with net income and presents clearly the relationship between net income and operating cash flows.

C is incorrect because the indirect method cash flow statement adjusts for non-cash items, not the direct method

Understanding Cash Flow Statements
LOS d
Sections 2.3, 2.3.1, 2.3.2

62 A company incurred the following unrealized holding gains in the current year:

- $100,000 on securities held for trading
- $500,000 on the foreign currency translation adjustment of a self-sustaining non-domestic subsidiary

Other comprehensive income for the year is *closest* to:

A $600,000.

B $100,000.

C $500,000.

C is correct. Unrealized holding gains foreign currency translation adjustments are included in other comprehensive income.

A is incorrect. This calculation incorrectly includes the gain on securities held for trading. These gains are recognized in net income, not other comprehensive income: $100,000 + $500,000 = $600,000.

B is incorrect. This calculation incorrectly excludes the foreign currency translation adjustment and fails to include the gains on securities held for trading. These gains are recognized in net income, not other comprehensive income.

Understanding Income Statements
LOS m, l

Section 8
Understanding Balance Sheets
LOS f
Section 4.5

63 A company has a fixed $1,100 capital budget and has the opportunity to invest in the four independent projects listed in the table:

Project	Investment Outlay	NPV
1	$600	$100
2	$500	$100
3	$300	$50
4	$200	$50

The combination of projects that provides the *best* choice is:

A 2, 3, and 4.

B 1, 3, and 4.

C 1 and 2.

A is correct. The company should choose the combination of projects that maximizes net present value (NPV) subject to the budget constraint of $1,100.

Projects	Investment Required	NPV	Decision
1 + 2	600 + 500 = 1,100	100 + 100 = 200	
1 + 3 + 4	600 + 300 + 200 = 1,100	100 + 50 + 50 = 200	
2 + 3 + 4	500 + 300 + 200 = 1,000	100 + 50 + 50 = 200	NPV = $200 with the least investment

B is incorrect. $1,100 investment for an NPV = $200 versus a $1,000 investment for an NPV = $200.

C is incorrect. $1,100 investment for an NPV = $200 versus a $1,000 investment for an NPV = $200.

Capital Budgeting
LOS c, d
Section 3, 4.1

64 A project has a cost of €16,253 with a net present value (NPV) of €423.11. The corresponding profitability index (PI) is *most likely*:

A 1.42.

B 0.03.

C 1.03.

C is correct. The PI is:

$$1 + \frac{€423.11}{€16,253} = 1.026$$

A is incorrect because it is 1 + NPV/100.

B is incorrect because it is the ratio of the NPV over the cost.

Capital Budgeting
LOS d
Section 4.1, 4.6

65 Which of the following statements is the *most* accurate description concerning the internal rate of return (IRR) method? IRR:

A is the preferred method for evaluating mutually exclusive projects.

B assumes that all cash flows from a project will be reinvested at the computed IRR.

C is sensitive to changes in the firm's weighted average cost of capital.

B is correct. The internal rate of return method assumes that the cash flows from a project are reinvested at the project's IRR; the net present value (NPV) method assumes that cash flows are reinvested at the cost of capital.

A is incorrect. NPV is the preferred method both because NPV directly measures the gain or loss in wealth from the project and because the reinvestment assumption of the NPV method is the more economically realistic.

C is incorrect. The IRR method is not sensitive to WACC but sensitive to the timing and pattern of the cash flows. In particular, when a project has a nonconventional cash flow pattern, there may be multiple IRRs or no IRR.

Capital Budgeting
LOS e
Sections 4.7–4.9

66 Recent trends in corporate governance *most likely* include:

A focusing on the corporate governance system's responsibility to maximize shareholder value.

B expanding the scope to consider the interests of employees, customers, and suppliers.

C increasing the diversity of corporate governance systems tailored to specific jurisdictions.

B is correct. A significant majority of OECD member countries have ratified the influential "Principles of Corporate Governance." Most recently updated in 2015, the principles call for an expanded scope of stakeholders to be considered as part of a prudent corporate governance system. Regulators and practitioners have responded by moving toward a more effective balance of stakeholder interests.

A is incorrect. There has been a move away from the narrower focus of shareholder theory toward the broader stakeholder theory.

C is incorrect. The trend is toward global convergence of corporate governance systems.

Corporate Governance and ESG: An Introduction
LOS a
Sections 2, 4.1

67 The *primary* motivation of activist shareholders is to promote:

A improved shareholder value.

B environmentally sustainable business practices.

C consideration of human rights in employee relations.

A is correct. The primary motivation of activist shareholders is to increase shareholder value. If they feel management or the board has failed to act in the best interests of shareholders, they may attempt to force changes by gaining control of the board.

B is incorrect. This is more likely to be a goal of ESG investors with an investment mandate focused on environmental factors.

C is incorrect. This is more likely to be a goal of ESG investors with an investing mandate focused on social factors.

Corporate Governance and ESG: An Introduction
LOS g
Section 6.1.2

68 A firm's before-tax costs of debt, preferred stock, and equity are 12%, 17%, and 20%, respectively. Assuming equal funding from each source and a marginal tax rate of 40%, the weighted average cost of capital (%) is *closest* to:

A 14.7%.

B 9.8%.

C 13.9%.

A is correct.

$$\begin{aligned}\text{WACC} &= w_d r_d(1 - t) + w_p r_p + w_e r_e \\ &= (1/3)(0.12)(1 - 0.4) + (1/3)(0.17) + (1/3)(0.20) \\ &= 14.73\%\end{aligned}$$

B is incorrect. If all costs are considered after tax:

$$[(1/3)(0.12) + (1/3)(0.17) + (1/3)(0.20)] \times (1 - 0.4) = 9.8\%$$

C is incorrect. If tax effect on cost of debt is miscalculated:

$$(1/3)(0.12)(0.4) + (1/3)(0.17) + (1/3)(0.20) = 13.93\%$$

Cost of Capital
LOS a, b
Section 2

69 A company issues new 20-year $1,000 bonds with a coupon rate of 6.2% payable semiannually at an issue price of $1,030.34. Assuming a tax rate of 28%, the firm's annual after-tax cost of debt (%) is *closest* to:

A 5.94.

B 4.28.

C 4.46.

B is correct. The annual after-tax cost of debt is the after tax annual yield to maturity (YTM). Find the YTM by using a financial calculator as follows:

PV = −1,030.34, FV = 1,000, N = 40 (20 × 2), PMT = 31 (0.062 × 1,000 × 0.5), compute i.

i = 2.97 semiannually

Annually, YTM = 2.97 × 2 = 5.94

Therefore, the associated after-tax value = 0.0428 = 0.0594 × (1 – 0.28).

A is incorrect because it is the yield to maturity.

C is incorrect because it is based on the coupon rate of 0.0620 annually.

Cost of Capital
LOS b, f
Section 3.1.1

70 Using the debt-rating approach to find the cost of debt is *most* appropriate when market prices for a company's debt are:

A below par value.

B unreliable.

C stable.

B is correct. The debt-rating approach is used when the market prices for debt are unreliable or nonexistent.

A is incorrect because prices below par value is not an indicator of a price being unreliable.

C is incorrect because stable prices imply reliable prices.

Cost of Capital
LOS f
Section 3.1.2

71 A company's asset beta is 1.2 based on a debt-to-equity ratio (D/E) of 50%. If the company's tax rate increases, the associated equity beta will *most likely*:

A increase.

B decrease.

C remain unchanged.

B is correct.

$$\beta_{\text{equity}} = \beta_{\text{asset}} \times \left[1 + (1 - \text{tax rate}) \times \text{D/E}\right]$$

If the tax rate increases, then the bracketed term (1 – tax rate) decreases, making the equity beta decrease because the asset beta is unchanged.

A is incorrect because the equity beta decreases.

C is incorrect because the equity beta decreases.

Cost of Capital
LOS h
Section 4.1

72 The following information is available for a company:

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

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

A 11.5%.

B 14.3%.

C 13.4%.

B is correct. The yield to maturity on a par value bond is the coupon rate of the bond

$r_d = 9.2\%$

$r_p = D_p/P_p = \$1.35/\$8.18 = 16.5\%$

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

$\text{WACC} = w_d r_d(1 - t) + w_p r_p + w_e r_e$

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

$= 14.33\%$

A is incorrect because 7% (i.e., 11% – 4%) is used as the market risk premium when finding the cost of common equity.

$r_e = R_F + \beta[E(R_M) - R_F] = 4\% + 1.3[7\%] = 13.1\%$

$\text{WACC} = 30\% \times 9.2\% \times (1 - 35\%) + 15\% \times 16.5\% + 55\% \times 13.1\%$

$= 11.47\%$

C is incorrect because both the cost of debt and preferred stock are tax adjusted.

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

$= 13.43\%$

Cost of Capital
LOS a, b
Section 2, 2.1, 3.2, 3.3
Portfolio Risk and Return: Part II
LOS g
Section 3.2.6

73 The unit contribution margin for a product is $20. A firm's fixed costs of production up to 300,000 units is $500,000. The degree of operating leverage (DOL) is *most likely* the lowest at which of the following production levels (in units):

A 300,000.

B 200,000.

C 100,000.

A is correct.

$$\text{DOL} = \frac{\text{quantity} \times \text{contribution margin}}{(\text{quantity} \times \text{contribution margin} - \text{fixed costs})}$$

$$\text{DOL (100,000 units)} = \frac{\$20 \times 100{,}000}{(\$20 \times 100{,}000 - \$500{,}000)} = 1.333$$

$$\text{DOL (200,000 units)} = \frac{\$20 \times 200{,}000}{(\$20 \times 200{,}000 - \$500{,}000)} = 1.143$$

$$\text{DOL (300,000 units)} = \frac{\$20 \times 300{,}000}{(\$20 \times 300{,}000 - \$500{,}000)} = 1.091$$

The DOL is lowest at the 300,000 unit production level.
C is incorrect because the DOL is lowest at the 300,000 unit level.
B is incorrect because the DOL is lowest at the 300,000 unit level.

Measures of Leverage
LOS a
Section 3.3

74 A company manages its treasury function to exactly maintain its minimum daily cash balance requirement. The following events occurred for the company on the same day:

	$ millions
Funds transfer to subsidiaries	200
Maturing investments	150
Issues a stock dividend	25
Debt repayments	100
Minimum daily cash balance	50

Which of the following *best* describes the activities required of the Treasurer's office this day? They would need to increase borrowing by:

A $175 million.

B $100 million.

C $150 million.

C is correct. The change in the net daily cash position (in millions) is calculated as shown below and would require additional borrowing of $150 million:

Opening cash balance		$50
Funds transfer to subsidiaries	(200)	
Maturing investments	150	
Debt repayments	(100)	
Change is cash for the day	(150)	
Borrowing required	**150**	
Closing cash balance		$50

Stock dividend is not included as it is a non-cash item.
B is incorrect. It assumes the $50 million of minimum cash balance is available.
A is incorrect. It includes the stock dividend of $25 (150 + 25= 175).

Working Capital Management
LOS d
Section 3.1

75 The strategic asset allocation and portfolio rebalancing policy are *most likely* addressed in which section of an investment policy statement?

A Appendices
B Investment objectives
C Procedures

A is correct. Information related to strategic asset allocation and portfolio rebalancing policy would be placed in the appendices of an investment policy statement.

B is incorrect because this section contains information on the client's objectives when investing.

C is incorrect because this section contains information on the steps to take to keep the investment policy statement current and the procedures to follow to respond to various contingencies.

Basics of Portfolio Planning and Construction
LOS b
Section 2.2

76 Which of the following is *least likely* a part of the execution step of the portfolio management process?

A Security analysis
B Portfolio construction
C Performance measurement

C is correct. Performance measurement is a part of the feedback step of the portfolio management process. The execution step includes asset allocation, security analysis, and portfolio construction.

A is incorrect. Security analysis is a part of the execution step of the portfolio management process.

B is incorrect. Portfolio construction is a part of the execution step of the portfolio management process.

Portfolio Management: An Overview
LOS d
Section 4

77 The return measure that *best* allows one to compare asset returns earned over different length time periods is the:

A holding period return.

B annualized return.

C net portfolio return.

B is correct. The annualized return is an average return measure that can be calculated using return data for a period that is shorter (or longer) than one year. In many cases, it is most convenient to annualize all available returns in order to compare returns when the time periods during which a return is earned or computed vary. It reflects the return that would be earned over a one-year period, assuming that money can be reinvested repeatedly while earning a similar return.

A is incorrect. The holding period return is defined as the return earned from holding an asset for a single specified period of time.

C is incorrect. The portfolio return is simply a weighted average of the returns of the individual investments or assets in a portfolio. Returns to different portfolios may be calculated over different time periods and may not be comparable.

Portfolio Risk and Return: Part I
LOS a
Section 2.1

78 When considering a portfolio that is optimal for one investor, a second investor with a higher risk aversion would *most likely*:

A expect a higher variance for the portfolio.

B derive a lower utility from the portfolio.

C have a lower return expectation for the portfolio.

B is correct. Utility has two terms: the expected return and a negative term based on the portfolio risk weighted by risk aversion. For an identical portfolio, the investor with a higher risk aversion (A) would calculate a lower utility (U).

$$U = E(r) - \frac{1}{2}A\sigma$$

A is incorrect. The expected variance of the portfolio is fixed. It does not change based on the preferences of different investors.

C is incorrect. The expected return of the portfolio is fixed. It does not change based on the preferences of different investors.

Portfolio Risk and Return: Part I
LOS d
Section 3.2

79 The point of tangency between the capital allocation line (CAL) and the efficient frontier of risky assets *most likely* identifies the:

A optimal risky portfolio.

B optimal investor portfolio.

C global minimum-variance portfolio.

A is correct. The optimal risky portfolio lies at the point of tangency between the capital allocation line and the efficient frontier of risky assets.

B is incorrect. The optimal investor portfolio lies at the point of tangency between the investor's indifference curve and the capital allocation line.

C is incorrect. The global minimum-variance portfolio is the left-most point on the minimum-variance frontier.

Portfolio Risk and Return: Part I
LOS h
Section 5.4

80 The slope of the security market line is *best* derived from the:

A risk-free rate of return.

B beta of the security.

C market risk premium.

C is correct. The security market line is a graphical representation of the CAPM with beta on the *x*-axis and expected return on the *y*-axis. The slope of the line is given by the market risk premium, the difference between the equity market return and the risk-free rate of interest.

A is incorrect. The risk-free rate of return marks the intercept term of the security market line.

B is incorrect. The beta of the security is shown on the *x*-axis.

Portfolio Risk and Return: Part II
LOS f
Section 4.2

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

A 4.50%.

B 2.10%.

C 0.75%.

B is correct. Jensen's alpha = 0.12 – [0.027 + 1.5(0.075 – 0.027)] = 0.021, or 2.10%.

A is incorrect. This is calculated by subtracting the market return from the portfolio return: 0.12 – 0.75 = 0.045 or 4.5%.

C is incorrect. This is calculated without the inclusion of the risk-free return: 0.12 – 1.5(0.075) = 0.0075 or 0.75%.

Portfolio Risk and Return: Part II
LOS h
Section 4.3.2

82 Which of the following transactions is *most likely* to affect a company's financial leverage ratio?

A Payment of a 9% stock dividend

B An increase in cash dividends paid

C Completion of a previously announced 1-for-20 reverse stock split

B is correct. Cash dividends affect a company's capital structure and financial leverage ratios by reducing assets and shareholders' equity.

A is incorrect. Neither stock splits nor stock dividends affect a firm's financial leverage ratio.

C is incorrect. Neither stock splits nor stock dividends affect a firm's financial leverage ratio.

Equity Valuation: Concepts and Basic Tools
LOS a
Section 4.1

83 The Gordon growth model is *most* appropriate for valuing the common stock of a dividend paying company that is:

A mature and relatively insensitive to economic fluctuations.

B young and just entering the growth phase.

C experiencing growth that is higher than the sustainable growth rate.

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

B is incorrect. A three-stage dividend discount model would be most appropriate for a fairly young company that is just entering the growth phase.

C is incorrect. A two-stage dividend discount model would be appropriate for a company that is experiencing a higher than the sustainable growth rate.

Equity Valuation: Concepts and Basic Tools
LOS h
Section 4.2

84 A group of analysts estimate a security's mean expected value to be $98.00 with a standard deviation of $0.55. Using a confidence interval of plus or minus two standard deviations and given the security is trading at $97.50, the security appears to be:

A undervalued.

B fairy valued.

C overvalued.

B is correct. The confidence interval of the security is between $96.90 ($98 – 2 × $0.55) and $99.10 ($98 + 2 × $0.55). The security price of $97.50 is within the confidence interval so it is fairly valued.

A is incorrect. The confidence interval of the security is between $96.90 ($98 – 2 × $0.55) and $99.10 ($98 + 2 × $0.55). The security price of $97.50 is within the confidence interval so it is fairly valued.

C is incorrect. The confidence interval of the security is between $96.90 ($98 – 2 × $0.55) and $99.10 ($98 + 2 × $0.55). The security price of $97.50 is within the confidence interval so it is fairly valued.

Equity Valuation: Concepts and Basic Tools
LOS a
Section 2
Hypothesis Testing
LOS d
Section 2

85 A company has initiated the process of selling unproductive land, representing 5% of its total assets, and using the proceeds to buy back its common shares. Holding other factors constant, these actions by the company will *most likely* result in a:

A lower sustainable growth.

B higher return on equity.

C higher operating margin.

B is correct. Share buyback reduces equity, holding other factors (e.g., earnings) constant, thus return on equity will be higher.

C is incorrect. Selling unproductive land will not impact the operating profit and, holding sales constant, there would be no effect on operating margin.

A is incorrect. With higher ROE, holding the retention ratio constant, the sustainable growth would be higher, not lower.

Financial Analysis Techniques
LOS c, d, e

(continued)

Sections 4.5.2, 6.2
Introduction to Industry and Company Analysis
LOS k
Section 6.1

86 An industry experiencing slow growth, high prices, and volumes insufficient to achieve economies of scale is *most likely* in the:

A shakeout stage.

B embryonic stage.

C mature stage.

B is correct. An embryonic industry is one that is just beginning to develop and is characterized by slow growth, high prices, volumes not yet sufficient to achieve meaningful economies of scale, developing distribution channels, and low brand loyalty because there is low customer awareness of the industry's product.

A is incorrect. A shakeout stage is usually characterized by slowing growth, intense competition, and declining profitability. In this stage, companies also tend to increasingly focus on reducing their cost structure and building brand loyalty.

C is incorrect. A mature industry is characterized by little or no growth, industry consolidation, and relatively high barriers to entry. The surviving companies tend to have brand loyalty and relatively efficient cost structures.

Introduction to Industry and Company Analysis
LOS h
Section 5.1.5.1

87 Which of the following is *most likely* classified as a defensive industry?

A A mature industry with government-controlled pricing

B A non-cyclical, high-growth industry

C A cyclical industry with a few competitors

A is correct. A defensive industry is non-cyclical with stable earnings. A mature industry with government-controlled pricing will have stable earnings and be non-cyclical.

B is incorrect. A defensive industry will have stable earnings, not growing earnings.

C is incorrect, A defensive industry is non-cyclic.

Introduction to Industry and Company Analysis
LOS i
Section 5.1.7

88 If a test rejects the hypothesis that market prices reflect private information but does not reject the hypothesis that they reflect past market data and public information, then the form of market efficiency is *best* described as:

A weak.

B strong.

C semi-strong.

C is correct. The forms of market efficiency are as follows:

Forms of Market Efficiency	Market Prices Reflect: Past Market Data	Public Information	Private Information
Weak	✓		
Semi-strong	✓	✓	
Strong	✓	✓	✓

If a test rejects the hypothesis that market prices reflect private information but does not reject the hypothesis that they reflect past market data and public information, then there is evidence that the form of market efficiency is semi-strong (because only past market data and public information are reflected in market prices).

A is incorrect. Markets are weak-form efficient when market prices reflect past market data only.

B is incorrect. Markets are strong-form efficient when market prices reflect past market data, public information, and private information.

Market Efficiency
LOS d
Section 3

89 A behavioral bias in which an investor assesses probabilities of outcomes depending on how similar they are to the current state is called:

A conservatism.

B representativeness.

C narrow framing.

B is correct. An investor assessing probabilities of outcomes depending on how similar they are to the current state is called representativeness.

A is incorrect. Conservatism is where investors tend to be slow to react to changes.

C is incorrect. In narrow framing, investors focus on issues in isolation.

Market Efficiency
LOS g
Section 5.3

90 Which of the following is most likely a characteristic of real assets?

A Substantial management costs

B High liquidity

C Homogeneity

A is correct. Real assets are characterized by illiquidity, not high liquidity. The heterogeneity of real assets, their illiquidity, and the substantial costs of managing them are all factors that complicate the valuation of real assets.

B is incorrect. Real assets are characterized by illiquidity, not high liquidity.

C is incorrect. Real assets are characterized by heterogeneity, not homogeneity.

Market Organization and Structure
LOS c
Section 3.6

91 A Japanese exporter will sell US dollars for Japanese yen in the quote-driven currency markets. Which of the following statements *best* describes her currency exchange transactions?

A Her counterparties are dealers.

B She will pay commissions for exchange services.

C This currency exchange transaction takes place in organized exchanges.

A is correct. In the quote-driven currency markets, dealers are counterparties to currency exchange transactions.

B is incorrect. A Japanese exporter pays no fee or commission to dealers. Dealers will profit from the bid–ask spreads.

C is incorrect. In the quote-driven currency markets, currency exchange transactions take place in the over-the-counter, not organized, exchanges.

Market Organization and Structure
LOS j
Section 8.2

92 A company's market information and balance sheet data at the end of fiscal year 2012 are as follows:

Price per Share and Shares Outstanding	
Current market price per share	$15.0
Number of shares outstanding (millions)	1.0

Balance Sheet Data As of 2012 ($ millions)			
Cash and cash equivalents	0.4	Current liabilities	1.0
Accounts receivable	1.2	Long-term liabilities	61.0
Inventories	40.0		
Investment securities	6.0	Common shareholders' equity	15.6
Property, plant, and equipment	30.0		
Total assets	**77.6**	**Total liabilities and equity**	**77.6**

If an analyst estimates that the market value of the company's investment securities is 115% of their reported value, the company's ratio of price to adjusted book value is *closest* to:

A 0.91.

B 0.96.

C 1.10.

A is correct.

Adjusted book value per share = (Adjusted value of Assets – Total liabilities)/ Number of shares

Market value of assets = 0.4 + 1.2 + 40.0 + (6.0 × 1.15) + 30 = $78.5 million

Market value of liabilities = 1.0 + 61.0 = $62.0 million

Adjusted book value per share per share = (78.5 – 62.0)/1.0 = $16.5

Price-to-adjusted book value = $15.00/$16.50 = 0.91

B is incorrect. It uses reported book value.

Book value per share = 15,600,000/1,000,000 = 15.6

Price-to-adjusted book value per share = 15/15.6 = 0.96

C is incorrect. It is adjusted book value-to-price ratio.

Adjusted book value per share =

$$\frac{\left\{\left[400{,}000 + 1{,}200{,}000 + 40{,}000{,}000 + \left(6{,}000{,}000 \times 1.15\right) + 30{,}000{,}000\right] - \left(1{,}000{,}000 + 61{,}000{,}000\right)\right\}}{1{,}000{,}000}$$

= 16.5

Adjusted book value-to-price per share = 16.5/15 = 1.10

Overview of Equity Securities
LOS g
Section 7.1
Equity Valuation: Concepts and Basic Tools
LOS l
Section 6

93 A market index contains the following two securities:

Stock	Shares in Index	Start-of-Period Price ($)	End-of-Period Price ($)	Dividend per Share ($)
A	600	40	37	2.00
B	500	50	52	1.50

The total return on an equal-weighted basis is *closest* to:

A –1.75%.

B 2.78%.

C 2.25%.

C is correct.

Stock	Shares in Index (1)	Start-of-Period Price ($) (2)	End-of-Period Price ($) (3)	Dividend per Share ($) (4)	Price Return (%) = (3)/(2) – 1	Total Return (%) = [(3) + (4)]/(2) – 1
A	600	40	37	2	–7.50%	–2.50%
B	500	50	52	1.5	4.00%	7.00%
Total return = [(–2.5 + 7)/2]						2.25%

A is incorrect. It is the price return on an equal-weighted basis.

Stock	Shares in Index (1)	Start of Period Price ($) (2)	End of Period Price ($) (3)	Dividend per Share ($) (4)	Price Return (%) = (3)/(2) – 1
A	600	40	37	2	–7.50%
B	500	50	52	1.5	4.00%
Total return =[(–7.5 + 4)/2]					–1.75%

B is incorrect. It is the total return on price-weighted basis.

Stock	Shares in index (1)	Start of Period Price ($) (2)	End of Period Price ($) (3)	Dividend per Share ($) (4)	Total Return (%) (5) = [(3) + (4)]/(2) – 1	Start of Period Weight (%) (6)	Price-Weighted Total Return (%) (5) × (6)
A	600	40	37	2	–2.50%	44%	–1.11%
B	500	50	52	1.5	7.00%	56%	3.89%
Total return =[(–1.11 + 3.89)/2]							2.78%

Security Market Indexes
LOS d, e
Section 3.2

94 A trader buys a stock at $30 and wants to limit downside risk. Which of the following orders will *most likely* guarantee that he can sell the stock at $25? (GTC means good till cancelled)

A Put option buy market order with a strike price of $25

B GTC, stop $25, limit $25 sell order

C GTC, stop $25, market sell order

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

C is incorrect. A "GTC, stop $25, market sell" order becomes a market order when the price drops to or below $25 and is executed at the best price available in the market. Thus, the selling price of $25 is not guaranteed.

B is incorrect. A "GTC, stop $25, limit $25 sell" order limits the lower boundary to $25 but it does not guarantee execution at $25; in a fast-moving market prices may have dropped below the limit and the order will then not be executed.

Market Organization and Structure
LOS g, h
Section 6.2
Option Markets and Contracts
LOS a
Section 2

95 A "junk" bond is *most likely* a:

A supranational bond.

B high-yield bond.

C bond with credit rating above BBB–.

B is correct. High-yield bonds are bonds with credit ratings below investment-grade levels, also known as speculative or junk bonds.

A is incorrect because supranational bonds are not related to credit ratings but to the type of issuers. They are issued by international organizations.

C is incorrect because bonds with credit rating above BBB– are referred to as investment-grade bonds. The junk bonds are those with credit ratinsg below BBB–.

Fixed-Income Markets: Issuance, Trading, and Funding
LOS a
Section 2.1

96 A company issues a 10-year bond on 1 January 2014. Its contract requires that the coupon rate increase by specified margins at specified dates as shown in the following table:

Coupon Payment Date Range	Coupon Rate
1 Jan 2014–31 Dec 2015	4.0%
1 Jan 2016–31 Dec 2017	5.0%
1 Jan 2018–31 Dec 2019	7.5%
1 Jan 2020–31 Dec 2023	9.0%

This security is *most likely* a:

A step-up coupon bond.

B deferred coupon bond.

C floating rate bond.

A is correct. A step-up coupon bond has contractually mandated changes in its coupon rate over time.

B is incorrect because a deferred coupon bond initially has no coupon payments.

C is incorrect because a floating rate bond's coupon rate will change in ways that are not known in advance, depending on future changes in the reference rate.

Fixed-Income Securities: Defining Elements
LOS e
Section 4.2

97 The Zera Company has borrowed capital by issuing a number of different securities. Which of the following *most likely* ranks the highest with respect to priority of payments?

A Subordinate loan

B Third lien debt

C Senior unsecured bond

B is correct. Third lien debt is secured debt. It has a secured interest in the pledged assets and ranks higher than all other unsecured debts.

A is incorrect because a subordinate loan is an unsecured debt. Among the various creditor classes, these obligations have among the lowest priority of claims and frequently have little or no recovery in the event of default.

C is incorrect because senior unsecured bond is also an unsecured debt. It ranks highest among all the unsecured debts, but it ranks below secured debts.

Fundamentals of Credit Analysis
LOS b
Section 3.2

98 In assigning credit ratings, the practice of notching by the rating agencies is *least likely* used to quantify the:

A probability of default.

B priority of payment in the event of default.

C potential severity of loss in the event of default.

A is correct. For the rating agencies, the main factor motivating the assignment of a rating is the probability of default. Notching is most likely to be used to address secondary factors such as the priority of payment in the event of default and the potential severity of loss in the event of default. These secondary factors are accounted for via notching the issue's rating up or down relative to the issuer's rating.

B is incorrect because this is a secondary factor that rating agencies can account for by notching the issue's rating up or down relative to the issuer's rating.

C is incorrect because this is a secondary factor that rating agencies can account for by notching the issue's rating up or down relative to the issuer's rating.

Fundamentals of Credit Analysis
LOS c
Section 4.2

99 An investor who owns a mortgage pass-through security is exposed to contraction risk, which is the risk that when interest rates:

A decline, the security will effectively have a longer maturity than was anticipated at the time of purchase.

B decline, the security will effectively have a shorter maturity than was anticipated at the time of purchase.

C rise, the security will effectively have a shorter maturity than was anticipated at the time of purchase.

B is correct. Contraction risk is the risk faced by investors when interest rates fall in that the security will effectively have a shorter maturity than was anticipated at the time of purchase because homeowners can refinance at new, lower interest rates.

A is incorrect because contraction risk is the risk faced by investors when interest rates fall in that the security will effectively have a shorter, not longer, maturity than was anticipated at the time of purchase because homeowners can refinance at new, lower interest rates.

C is incorrect because contraction risk is the risk faced by investors when interest rates fall, not rise, in that the security will effectively have a shorter maturity than was anticipated at the time of purchase because homeowners can refinance at new, lower interest rates.

Introduction to Asset-Backed Securities
LOS d
Section 5.1.6

100 How much will the value of a three-year $100 par value coupon bond with annual payments, a coupon rate of 9%, and a discount rate of 7% *most likely* change if market interest rates immediately increase by 1%?

A –2.68

B –3.47

C –2.40

A is correct. The value of the bond is

$$\frac{9}{1.07^1} + \frac{9}{1.07^2} + \frac{109}{1.07^3} = 8.41 + 7.86 + 88.98 = 105.25$$

if market interest rates increase, the discount rate will increase, and the value will be

$$\frac{9}{1.08^1} + \frac{9}{1.08^2} + \frac{109}{1.08^3} = 8.33 + 7.72 + 86.53 = 102.57$$

a change of –2.68.

B is incorrect because it assumes a year passes before the discount rate increases from 7% to 8% and calculates a new bond value of 101.75.

C is incorrect because it reverses the coupon rate and discount rate in the calculations.

Introduction to Fixed-Income Valuation
LOS a
Section 2.1

101 A two-year spot rate of 5% is *most likely* the:

A yield to maturity on a zero-coupon bond maturing at the end of Year 2.

B coupon rate in Year 2 on a coupon-paying bond maturing at the end of Year 4.

C yield to maturity on a coupon-paying bond maturing at the end of Year 2.

A is correct. A spot rate is defined as the yield to maturity on a zero-coupon bond maturing at the date of that cash flow.

B is incorrect because the spot rate is the yield to maturity on a zero-coupon bond maturing at that point in time and not the coupon rate on a coupon-paying bond.

C is incorrect because the spot rate is the yield to maturity on a zero-coupon bond maturing at that point in time and not the yield to maturity on a coupon-paying bond.

Introduction to Fixed-Income Valuation
LOS c
Section 2.4

102 In using matrix pricing to estimate the required yield spread on a new corporate bond issue, the benchmark rate used is *most likely* to be the:

A coupon rate on a government bond with a similar time to maturity.

B yield to maturity on a corporate bond with similar credit risk and time to maturity.

C yield to maturity on a government bond with a similar time to maturity.

C is correct. The benchmark rate is the yield to maturity on a government bond with the same, or similar, time to maturity.

A is incorrect because the benchmark rate is measured relative to the yield to maturity and not the coupon rate.

B is incorrect because the benchmark rate is measured relative to the yield to maturity of a government bond, not a similar corporate bond.

Introduction to Fixed-Income Valuation
LOS e
Section 3.2

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

A 8.37%.

B 8.29%.

C 7.41%.

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

B is incorrect because it is the security's current yield: ($8/$96.47).

C is incorrect because it is: \$8/\$108 = 0.0741.

Introduction to Fixed-Income Valuation
LOS f
Section 3

104 Which of the following statements is *most likely* correct regarding the spot and forward curves. The spot curve:

A can be calculated from the forward curve, and the forward curve can be calculated from the spot curve.

B can be calculated from the forward curve, but the forward curve cannot be calculated from the spot curve.

C cannot be calculated from the forward curve, but the forward curve can be calculated from the spot curve.

A is correct. The forward and spot curves are interconnected to each other. The spot curve can be calculated from the forward curve, and the forward curve can be calculated from the spot curve. Either curve can be used to value fixed-rate bonds.

B is incorrect because the spot curve can be calculated from the forward curve, and the forward curve can be calculated from the spot curve.

C is incorrect because the spot curve can be calculated from the forward curve, and the forward curve can be calculated from the spot curve.

Introduction to Fixed-Income Valuation
LOS g
Section 4

105 An investor purchases an option-free bond paying an annual coupon rate of 10% and maturing in 10 years at its par value of \$100. The investor sells the bond after seven years, receiving a total of seven coupons over this period. Assume that the coupons are reinvested at an annual interest rate of 8% over the investor's holding period. The future value of the reinvested coupon payments at the end of the investor's holding period is *closest* to:

A 70.00.

B 75.90.

C 89.23.

C is correct. The future value of the reinvested coupon payments is computed as follows:

$$10(1.08)^6 + 10(1.08)^5 + 10(1.08)^4 + 10(1.08)^3 + 10(1.08)^2 + 10(1.08)^1 + 10 = 89.23$$

A is incorrect because it computes the future value of the coupon payment by just adding them up.

B is incorrect because it uses a reinvestment rate of 10% and a coupon payment of 8.00, as follows:

$$8(1.10)^6 + 8(1.10)^5 + 8(1.10)^4 + 8(1.10)^3 + 8(1.10)^2 + 8(1.10)^1 + 8 = 75.90$$

Understanding Fixed-Income Risk and Return
LOS a
Section 2

106 Which of the following statements is *least* accurate regarding the factors that affect the interest rate risk characteristics of an option-free bond?

A The lower the coupon rate, the greater the bond's price sensitivity to changes in interest rates.

B The higher the yield, the greater the bond's price sensitivity to changes in interest rates.

C The longer the bond's maturity, the greater the bond's price sensitivity to changes in interest rates.

B is correct. Option-free bonds have positive convexity. The higher the yield to maturity, the lower the duration (and thus the lower the interest rate risk).

A is incorrect because bonds with longer maturities have higher interest rate risks.

C is incorrect because bonds with lower coupon rates have higher interest rate risks.

Understanding Fixed-Income Risk and Return
LOS e
Section 3.3

107 Which of the following events will *most likely* increase the short-term bond yield volatility?

A Slow economic growth expectation

B Central bank engaging in expansionary monetary policy

C High inflation expectation

B is correct. A central bank engaging in expansionary monetary policy might cause the yield curve to steepen by reducing short-term interest rates and thus cause greater volatility in short-term bond yields to maturity than in longer-term bonds.

A is incorrect because slow economic growth expectation will have more impact on the longer-term bond yield volatility.

C is incorrect because high inflation expectation will have more impact on the longer-term bond yield volatility.

Understanding Fixed-Income Risk and Return
LOS j
Section 4.1

108 Valuation of a swap during its life will *least likely* involve the:

A application of the principle of no arbitrage.

B use of replication.

C investor's risk aversion.

C is correct. Risk neutrality, not risk aversion, is a key element of derivatives pricing, including swaps.

A is incorrect. The statement is true because the principle of no arbitrage is applied in pricing swaps.

B is incorrect. The statement is true because replication is used in pricing swaps.

Basics of Derivative Pricing and Valuation
LOS a
Section 1

109 If a forward contract requires no cash outlay at initiation, it is *most likely* true that at initiation:

A value exceeds price.

B price exceeds value.

C price is equal to value.

B is correct. At initiation, value is equal to zero. Price is a positive number that states the amount that must be paid when the purchase takes place.

A is incorrect. Value is zero; price is a positive number.

C is incorrect. Value is zero; price is a positive number.

Basics of Derivative Pricing and Valuation
LOS b
Section 2.4

110 A forward rate agreement *most likely* differs from most other forward contracts because:

A positions cannot be closed out prior to maturity.

B it involves an option component.

C its underlying is not an asset.

C is correct. Forward rate agreements, unlike most other forward contracts, do not have an asset as an underlying. Instead, the underlying is an interest rate.

A is incorrect. Forward rate agreements can also be closed out prior to maturity.

B is incorrect. Forward rate agreements do not involve an option component.

Basics of Derivative Pricing and Valuation
LOS e
Section 3.1.4

111 The pricing of forwards and futures will *most likely* differ if:

A interest rates exhibit zero volatility.

B futures prices and interest rates are negatively correlated.

C futures prices and interest rates are uncorrelated.

B is correct. The pricing of forwards and futures will differ if futures prices and interest rates are negatively correlated. A negative correlation between futures prices and interest rates makes forwards more desirable than futures in the long position.

A is incorrect. If interest rates exhibit zero volatility, the pricing of forwards and futures will be identical.

C is incorrect. If futures prices and interest rates are uncorrelated, the pricing of forwards and futures will be identical.

Basics of Derivative Pricing and Valuation
LOS f
Section 3.2

112 The price of an interest rate swap that involves the exchange of a fixed payment for a floating payment is *most likely*:

A equal to its value at expiration.

B set at initiation and constant over time.

C affected by changes in the floating payment.

B is correct. Swaps have both a price and a value. Price in the context of a swap is a reference to the fixed-rate payment on the swap, which is constant over time. The value of a swap is zero at initiation but can change over the life of the swap as market interest rates change.

A is incorrect. Price and value are not normally equal at expiration.

C is incorrect. The price in the context of a swap is a reference to the fixed-rate payment on the swap, which is constant over time and does not change in reaction to interest rate changes.

Basics of Derivative Pricing and Valuation
LOS h
Section 3.3

113 Using put–call parity, a long call can *best* be replicated by going:

A long the put, short the asset, and long the bond.

B short the put, long the asset, and short the bond.

C long the put, long the asset, and short the bond.

C is correct. According to put–call parity, a long call is equal to long put, long asset, short bond.

A is incorrect. The short asset position must be a long position, and the long bond position must be a short position. According to put–call parity, a long call is equal to long put, long asset, short bond.

B is incorrect. The short put position must be a long position. According to put–call parity, a long call is equal to long put, long asset, short bond.

Basics of Derivative Pricing and Valuation
LOS l
Section 4.1.9

114 For a call option, if the underlying asset's value is less than the option's exercise price, the option is said to be:

A at the money.

B out of the money.

C in the money.

B is correct. If the underlying asset's value is less than the option's exercise price, the call option is not worth exercising and is said to be out of the money.

A is incorrect. For an at-the-money call option, the value of the underlying asset is equal to the option's exercise price, and the option buyer would be indifferent between exercising or not exercising the option.

C is incorrect. For an in-the-money call option, the value of the underlying asset is greater than the option's exercise price, and the option is worth exercising.

Derivative Markets and Instruments
LOS c
Section 4.2.1

115 A *least likely* reason for investors to include commodity derivatives in their investment portfolios is:

A commodity-related stocks' positive correlation with the overall equity market.

B it eliminates the need to understand the physical supply chain and general supply–demand dynamics of a commodity.

C the tendency for commodity prices to be positively correlated with inflation.

B is correct. Because the prices of commodity derivatives are, to a significant extent, a function of the underlying commodity prices, it is important to understand the physical supply chain and general supply–demand dynamics of a commodity.

A is incorrect because commodity-related stocks tend to exhibit a high degree of correlation with the overall equity market. High correlation means low diversification benefits, which reduces the appeal of including this type of investment in a portfolio so investors may be drawn to commodity derivatives that have a lower correlation with the overall equity market.

C is incorrect because commodity prices tend to be positively correlated with inflation.

Introduction to Alternative Investments
LOS a, c
Section 6

116 Hedge funds are *least likely* to have restrictions concerning:

A the withdrawal of invested funds.

B the use of derivatives.

C the number of investors in the fund.

B is correct. The use of derivatives is a typical feature of contemporary hedge funds.

A is incorrect. Hedge funds tend to impose restrictions on the withdrawal of funds.

C is incorrect. Investing in hedge funds is open only to a limited number of investors.

Introduction to Alternative Investments
LOS b
Section 3

117 Which of the following is *most likely* a private equity strategy?

A Merger arbitrage

B Venture capital

C Quantitative directional

B is correct. Venture capital is a private equity strategy in which private equity companies invest and get actively involved in the management of portfolio companies.

A is incorrect. This is a hedge fund strategy.

C is incorrect. This is a hedge fund strategy.

Introduction to Alternative Investments
LOS d
Section 4.2.2

118 Which of the following characteristics of a target company is *likely* the *least* attractive for a leveraged buyout?

A Substantial amount of physical assets

B Strong and sustainable cash flow

C High leverage

C is correct. Low leverage is an attractive feature of a target company in a leveraged buyout. This characteristic makes it easier for an acquirer to use debt to finance a large portion of the purchase price.

A is incorrect. A substantial amount of physical assets is a desirable feature of a target company in a leveraged buyout.

B is incorrect. A strong and sustainable cash flow is a desirable feature of a target company in a leveraged buyout.

Introduction to Alternative Investments
LOS d
Section 4.2.1.2

119 If the price of a commodity futures contract is below the spot price, it is *most likely* that the:

A cost of carry exceeds the convenience yield.

B roll yield is negative.

C convenience yield exceeds storage costs.

C is correct. The convenience yield must exceed the cost of carry to arrive at a futures price below the spot price because the futures price is approximately equal to the spot price [(1 + *r*) + Storage cost – Convenience yield] and the cost of carry is defined as interest cost plus storage cost. Given that interest cost is always positive, the convenience yield must also exceed storage costs to arrive at a futures price below the spot price.

A is incorrect. If the cost of carry exceeds the convenience yield, the futures price is above the spot price.

B is incorrect. Roll yield is defined as the difference between the spot price and the price of the futures contract. If the price of a commodity futures contract is below the spot price, roll yield is positive.

Introduction to Alternative Investments
LOS e
Section 6.4.1

120 Investors will *most likely* have difficulty managing diversification across hedge funds if the funds:

A make decisions via investment committees.

B fail to appoint chief risk officers.

C seek to keep their strategies private.

C is correct. The lack of transparency in positions and strategies makes it difficult for investors to effectively manage diversification across funds.

A is incorrect. Decision making by an investment committee does not limit the information needed for an investor when considering diversification benefits.

B is incorrect. Failure to appoint a chief risk officer does not limit the information needed for an investor when considering diversification benefits.

Introduction to Alternative Investments
LOS g
Section 8.1.3