2019 Level I Mock Exam (B) 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
1–18, 31	Ethical and Professional Standards	28.5
19–30	Quantitative Methods	18
32–43	Economics	18
44–61	Financial Reporting and Analysis	27
62–73	Corporate Finance	18
74–80	Portfolio Management	10.5
81–93	Equity	19.5
94–106	Fixed Income	19.5
107–113	Derivatives	10.5
114–120	Alternative Investments	10.5
	Total:	**180**

2019 LEVEL I MOCK EXAM (B) AM

1 Sato Kashingaki, CFA, is a financial advisor who practices in multiple jurisdictions. In his resident country, Country A, he is not required by law to hold a financial advisor's license but he is required to uphold a fiduciary duty to his clients. In Country B, authorities require him to hold a financial advisor's license, but he is not expected to uphold a fiduciary duty to his clients. In Country C, authorities require both a financial advisor's license and an asset management license in addition to upholding a fiduciary responsibility toward clients. In which of the three countries does Kashingaki have the duty to adhere to the CFA Code and Standards over local laws?

A Country A.

B Country B.

C Country C.

B is correct because Standard I–Professionalism requires members and candidates to comply with the more strict law, rule, or regulation in the event of conflicts of any applicable laws, rules, and regulations (including the CFA Institute Code of Ethics and Standards of Professional Conduct). Country B does not require a financial advisor to uphold a fiduciary duty (as is required by Country A and C), i.e., put the client's interest before their own, therefore the CFA Code of Ethics and Standards of Professional Conduct (Duty to Clients) would be applicable as it is the stricter of the two.

A is incorrect because Country A requires the upholding of fiduciary duties that creates a higher standard than that of the Code and Standards.

C is incorrect because Country C requires two licenses and the upholding of fiduciary duties that creates a higher standard than that of the Code and Standards. Thus Country C's laws are the governing law.

Code of Ethics and Standards of Professional Conduct
LOS a
Standard I(A)–Knowledge of the Law

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

A No.

B Yes, because he misappropriated property now belonging to Branch.

C Yes, because he failed to inform his new employer the model was the same one used by his previous employer.

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

B is incorrect. The model Piedmont presented to his new employer was not Branch's property. It was created by Piedmont prior to his employment with Branch.

C is incorrect because the model was not created for Branch in the course of his employment, but was adopted by Branch.

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

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

A Jeffrey Jones, CFA (expected 2014)

B Candidate in the CFA Institute CFA Program

C Passed Level II of the CFA examination in 2009

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

A is incorrect as it is an improper reference to use "expected" as part of the designation.

B is incorrect as a person can only state he is a Candidate if he is currently enrolled in the CFA Program.

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

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

A did not violate any Code or Standard.

B violated the Professional Misconduct Standard.

C violated both Misconduct and Integrity of Capital Markets Standards.

B is correct because the CFA Institute Code of Ethics requires members to act with integrity, competence, diligence, respect, and in an ethical and professional manner; the Standards of Professional Conduct relating to Professional Misconduct state members and candidates must not commit any act reflecting adversely on their professional reputation, integrity, or competence. Bennett's actions violated the Code of Ethics and the Standard relating to Professionalism but not the Standard relating to Integrity of Capital Markets.

A is incorrect because Bennett's actions violated the Code of Ethics and the Standard relating to Professionalism.

C is incorrect because Bennett's actions violated the Code of Ethics and the Standard relating to Professionalism but not the Standard relating to Integrity of Capital Markets.

Guidance for Standards I–VII

LOS a

Standard I(D)–Misconduct, Standard II–Integrity of Capital Markets

5 Alexandra Smirnov, CFA, is a pension consultant to the Springwell Pension Fund. After reviewing Springwell's three-year performance presentation showing the fund's underperformance relative to its investment objectives and agreed benchmarks, Smirnov recommends that the fund hire new asset managers. Smirnov proposes that the fund hire Newday Managers on the basis of recent meetings she has had with the firm. Lengthy discussions at these meetings included Newday's investment strategy, its suitability to manage pension funds, its ability to adhere to its stated strategy, the firm's historical investment performance, and its adoption of the CFA Institute Code and Standards. Smirnov turned down Newday's offer of an introduction fee when recommending its services, but did not inform Springwell trustees of this offer. Which of the following CFA Institute Standards does Smirnov *most likely* violate?

A Referral Fees

B Loyalty, Prudence, and Care

C Diligence and Reasonable Basis

C is correct because Smirnov violated Standard V(A)–Diligence and Reasonable basis because she recommended an external advisor without first understanding the adviser's compliance and internal control procedures. She was correct in seeking to understand the proposed fund manager's code of ethics, quality of performance returns, and ability to adhere to its stated investment strategy, but to complete her work she also needed to perform due diligence about the firm's compliance and internal control procedures.

A is incorrect because Smirnov refused the referral fee [Standard VI(C)–Referral Fees], so she did not need to inform her client of this matter. There is also no indication that she did not act with reasonable care and prudent judgment when recommending a change in asset managers to meet the objectives of the client.

B is incorrect because there is no indication that she did not act with reasonable care and prudent judgment when recommending a change in asset managers to meet the objectives of the client. Nor is it evident that she had any conflicts of interest when recommending a particular manager, especially because she refused the referral fee.

Guidance for Standards I–VII

LOS a

Standard III(A)–Loyalty, Prudence, and Care, Standard V(A)–Diligence and Reasonable Basis, Standard VI(C)–Referral Fees

6 Kam Bergeron, CFA, is an equity portfolio manager who often takes time off in the afternoon to play golf with important clients. Today, Bergeron is on the golf course when his game is interrupted by a phone call from his office. The call is from Bergeron's assistant, who notifies him of a steep and accelerating market decline. Bergeron, eager to get back to his golf game, tells his assistant to raise cash by selling 15% of all clients' holdings. Bergeron instructs his assistant to first sell the most liquid stocks in each client's portfolio and then do the same for his personal account. Bergeron is *least likely* to be in violation of which of the CFA Institute Standards of Professional Conduct?

A Suitability

B Priority of transactions

C Diligence and reasonable basis

B is correct, as the manager gives instructions to sell his personal holdings after those of his clients so there is no indication that a violation of Standard VI(B)–Priority of Transactions occurred.

A is incorrect, as it is not clear selling a fixed percentage of all liquid stocks would be an investment action consistent with the stated objectives and constraints of each client's portfolio.

C is incorrect as the decision by the manager to conduct an across the board sale of liquid stocks does not appear to have a reasonable and adequate basis nor to be supported by appropriate research and investigation. This action appears to be motivated by the manager's interest in getting back to his golf game rather than any investment rationale.

Guidance for Standards I–VII

LOS b

Standard III(C)–Suitability, Standard V(A)–Diligence and Reasonable Basis, Standard VI(B)–Priority of Transactions

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7 Molly Burnett, CFA, is a portfolio manager for a fund that only invests in environmentally friendly companies. A multinational utility company recently acquired one of the fund's best performing investments, a wind power company. The wind power company's shareholders received utility company shares as part of the merger agreement. The utility has one of the worst environmental records in the industry, but its shares have been one of the top performers over the past 12 months. Because the utility pays a high dividend every three months, Burnett holds the utility shares until the remaining two dividends are paid for the year then sells the shares. Burnett *most likely* violated the CFA Institute Standard of Professional Conduct concerning:

A suitability.

B disclosure of conflicts.

C independence and objectivity.

A is correct because the utility is not a suitable investment for a fund that only invests in companies with good environmental records. Continuing to hold this investment, therefore, was a violation of Standard III(C)–Suitability.

B is incorrect because the violation concerns an unsuitable investment. Although the manager has a conflict of interest concerning her desire to hold onto a high dividend stock that has performed well in the past despite it being unsuitable for the Fund, disclosing this would not alleviate the fact that the holding is unsuitable for the Fund that only investments in companies with good environmental records.

C is incorrect because there has not been a violation of independence and objectivity.

Guidance for Standards I–VII

LOS b

Standard I(B)–Independence and Objectivity, Standard III(C)–Suitability, Standard VI(A)–Disclosure of Conflicts

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8 Pia Nilsson is a sole proprietor investment advisor. An economic recession has reduced the number of clients she advises and caused revenues to decline. As a result, Nilsson has not paid her CFA Institute membership dues for the past two years. When a national financial publication recently interviewed Nilsson, she indicated that up until two years ago she had been a CFA charterholder and a CFA Institute member in good standing. In addition, she stated the completion of the CFA Program enhanced her portfolio management skills and enabled her to achieve superior returns on behalf of her clients. Which of Nilsson's following actions *most likely* violated the CFA Institute Standards of Professional Conduct?

A Nonpayment of CFA Institute membership dues

B Attributing her superior returns to participation in the CFA Program

C Indicating that being a CFA charterholder has enhanced her portfolio management skills

B is correct because it is a violation of Standard VII(B)–Responsibilities as a CFA Institute Member or CFA Candidate to claim that the CFA charter helped her to achieve superior returns.

A is incorrect because it is appropriate to claim that being a charterholder has improved her portfolio management skills.

C is incorrect because it is not a violation to not pay fees if the person does not claim to be a CFA charterholder or a member of the CFA Institute.

Guidance for Standards I–VII

LOS b

Standard VII(B)–Reference to CFA Institute, the CFA Designation, and the CFA Program

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9 Lisa Hajak, CFA, specialized in research on real estate companies at Cornerstone Country Bank for the past twenty years. Hajak recently started her own investment research firm, Hajak Investment Advisory. One of her former clients at Cornerstone asks Hajak to update a research report she wrote on a real estate company when she was at Cornerstone. Hajak updates the report, which she had copied to her personal computer without the bank's knowledge, and replaces references to the bank with her new firm, Hajak Investment Advisory. Hajak also incorporates the conclusions of a real estate study conducted by the Realtors Association that appeared in the *Wall Street Journal*. She references the Journal as her source in her report. She provides the revised report free of charge along with a cover letter for the bank's client to become a client of her firm. Concerning the reissued research report, Hajak *least likely* violated the CFA Institute Standards of Professional Conduct because she:

A solicited the bank's client.

B did not obtain consent to use the bank report.

C did not cite the actual source of the real estate study.

A is correct as soliciting the bank's client did not violate Standard IV(A)–Loyalty because the manager is no longer an employee of the bank and there is no indication she obtained the client information from bank sources. The member, however, has violated Standard V(C)–Record Retention, because when she left the bank she took the property of the bank without express permission to do so. In addition, the analyst violated Standard I(C)–Misrepresentation by creating research materials without attribution, which is demonstrated when the manager adds to the new report a real estate study she saw in the *Wall Street Journal*, referencing the Journal only. In all instances, a member or candidate must cite the actual source of the information. If she does not obtain the report and review the information, the manager runs the risk of relying on second-hand information that may misstate facts. Best practice would be either to obtain the complete study from its original author and cite only that author or to use the information provided by the intermediary and cite both sources.

B is incorrect because according to Standard V(C)–Record Retention, when a member or candidate leaves a firm to seek other employment, the member or candidate cannot take the property of the firm, including originals or copies of supporting records of the member's or candidate's work, to the new employer without the express consent of the previous employer.

C is incorrect because the analyst violated Standard I(C)–Misrepresentation by creating research materials without attribution, which is demonstrated when the manager adds to the new report a real estate study she saw in the *Wall Street Journal*, referencing the Journal only. In all instances, a member or candidate must cite the actual source of the information. If she does not obtain the report and review the information, the manager runs the risk of relying on second-hand information that may misstate facts. Best practice would be to either obtain the complete study from its original author and cite only that author or to use the information provided by the intermediary and cite both sources.

Guidance for Standards I–VII

LOS b

Standard I(C)–Misrepresentation, Standard IV(A)–Loyalty, Standard V(C)–Record Retention

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10 Lin Liang, CFA, is an investment manager and an auto industry expert. Last month, Liang sent securities regulators an anonymous letter outlining various accounting irregularities at Road Rubber Company. Shortly before he sent the letter to the regulators, Liang shorted Road stock for his clients. Once the regulators opened an investigation, which Liang learned about from his sources inside the company, Liang leaked this information to multiple sources in the media. When news of the investigation became public, the share price of Road immediately dropped 30%. Liang then covered the short positions and made $5 per share for his clients. Liang *least likely* violated which of the CFA Institute Standards of Professional Conduct?

A Misconduct.

B Market Manipulation.

C Priority of Transactions.

C is correct because the member has engaged in information-based manipulation of Road stock in violation of Standard II(B)–Market Manipulation and Standard I(D)–Misconduct. Members and candidates must refrain from "pumping up" (or down in this case) the price of an investment by issuing misleading positive (negative) information for their or their clients' benefit. The member has not violated Standard VI(B)–Priority of Transactions because this concerns client investment transactions having priority over member or candidate investment transactions and is not applicable here.

A is incorrect because Standard I(D)–Misconduct, has been violated. The member should not manipulate the market! The premature use of the information is secondary, while the market manipulation is primary.

B is incorrect because Standard II(B)–Market Manipulation, has been violated. The member should not manipulate the market! Premature use of the information is secondary, while the market manipulation is primary.

Guidance for Standards I–VII

LOS b

Standard I(A)–Knowledge of the Law, Standard I(D)–Misconduct, Standard II(B)–Market Manipulation, Standard VI(B)–Priority of Transactions

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11 Chan Liu, CFA, is the new research manager at the Pacific MicroCap Fund. Liu observed the following activities after she published a research report on a thinly traded micro cap stock that included a "buy" recommendation:

- Pacific traders purchased the stock for Pacific's proprietary account and then purchased the same stock for all client accounts; and
- Pacific marketing department employees disseminated positive, but false, information about this stock in widely read Internet forums.

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

A Report the observed activities to her employer.

B Remove her name from the micro cap stock research report.

C Publicly refute the false information posted on Internet forums.

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

B is incorrect because the firm the member is employed by appears to be engaged in a classic pump and dump stock fraud and market manipulation scheme. Removing her name from the firm's investment recommendation would not alleviate the member from her more immediate responsibilities under Standard I(A)–Knowledge of the Law because the firm and the member must not knowingly participate or assist in and must dissociate from any violations of such laws, rules, or regulations. Now that the member knows of the violations, she must dissociate from them. Inaction may be construed as participation or assistance in the illegal or unethical conduct.

C is incorrect because the firm the member is employed by appears to be engaged in a classic pump and dump stock fraud and market manipulation scheme and the member must not knowingly participate or assist in and must dissociate from any violations of such laws, rules, or regulations as required by Standard I(A)–Knowledge of the Law. Inaction may be construed as participation or assistance in the illegal or unethical conduct.

Guidance for Standards I–VII

LOS c

Standard I(A)–Knowledge of the Law, Standard II(B)–Market Manipulation, Standard VI(B)–Priority of Transactions

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12 Teresa Staal, CFA, is an investment officer in a bank trust department. She manages money for celebrities and public figures, including an influential local politician. She receives a request from the politician's political party headquarters to disclose his stock holdings. The request indicates that local law requires the disclosure. What steps should Staal *most likely* take to ensure she does **not** violate any CFA Institute Standards of Professional Conduct?

A Provide the information and inform her client.

B Send the requested documents and inform her supervisor.

C Check with her firm's compliance department to determine her legal responsibilities.

C is correct. In order to avoid violating Standard III(E) Staal should determine if applicable securities regulations require disclosing the records before she provides the confidential information concerning her client's investments.

A is incorrect as providing the requested information would violate the confidentiality of the client's records.

B is incorrect as providing the requested information would violate the confidentiality of the client's records.

Guidance for Standards I–VII

Standard III(E)–Preservation of Confidentiality

LOS c

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13 Yao Tsang, CFA, has a large percentage of his net worth invested in the Australian mining company Outback Mines, which he has held for many years. Tsang is in the process of moving to a new employer where he is responsible for initiating research on mining companies. Shortly after his move, Tsang is asked to complete a research report on Outback. In order to meet the CFA Institute Standards of Professional Conduct concerning his stock holding, which of the following actions is *most* appropriate for Tsang to take?

A Disclose his stock holding to his employer and to clients.

B Sell his stock holdings to eliminate any potential conflict of interest.

C Refuse to write the report and ask his employer to assign another analyst to complete the analysis.

A is correct. Full disclosure should be made as required by Standard VI(A). This standard does not preclude an analyst from owning shares in a covered company but any ownership needs to be adequately disclosed. As the stock in question has been held for

many years it may not be practical to sell it due to issues such as tax consequences. In addition, since the analyst has been hired to initiate coverage of mining companies, the firm may not have other analysts that would be as competent in completing a research report on mining companies.

B is incorrect because the stock in question has been held for many years and it may not be practical to sell it due to capital gains taxes or other issues. Full disclosure should be made as required by Standard VI(A), but selling any existing holdings prior to writing a research report is not a requirement of the standards.

C is incorrect. Tsang is able to write the report for his employer as long as his ownership is adequately disclosed.

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

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14 Joan Tasha, CFA, a supervisor at Olympia Advisors (OA), wrote and implemented compliance policies at her firm. A long-time OA employee, Derek Longtree, recently changed the asset allocation of a client, which is inconsistent with her financial needs and objectives and with OA's policies. Until now, Longtree has never violated OA's policies. Tasha discusses the issue with Longtree but takes no further action. Do Tasha's actions concerning Longtree most likely violate any CFA Institute Standards of Professional Conduct?

A No.

B Yes, because she failed to detect Longtree's actions.

C Yes, because she did not take steps to ensure that the violation will not be repeated.

C is correct as once a supervisor learns that an employee has violated or may have violated the law or the Code and Standards, the supervisor must promptly initiate an investigation to ascertain the extent of the wrongdoing as required by Standard IV(C)–Responsibilities of Supervisors. Relying on an employee's statements about the extent of the violation or assurances that the wrongdoing will not recur is not enough. Reporting the misconduct up the chain of command and warning the employee to cease the activity are also not enough. Pending the outcome of the investigation, a supervisor should take steps to ensure that the violation will not be repeated, such as placing limits on the employee's activities or increasing the monitoring of the employee's activities.

A is incorrect as a violation of Standard IV(C)–Responsibilities of Supervisors has occurred.

B is incorrect as there is no indication that the supervisor failed to take reasonable efforts to detect and prevent violations of Oaktree's policies by Longtree.

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

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15 Which of the following situations *most likely* helps to explain why the GIPS standards were created?

A Firms only including top performing funds to represent their performance history.

B Asset managers including the performance of all portfolios including those no longer managed in their performance history.

C Consistency amongst fund managers when making investment performance presentations.

A is correct. The GIPS standards were created to help prevent misleading practices such as Representative Accounts, whereby firms select top-performing portfolios to represent the firm's overall investment results for a specific mandate.

B is incorrect. By including all portfolios a manager no longer manages, any Survivorship Bias is eliminated. Survivorship Bias is a misleading practice that the GIPS standards aim to eliminate.

C is incorrect because. By having consistent reporting styles for performance measurement between asset managers, valid comparisons are easier for the client and potential client to obtain. This was one of the objectives of the GIPS standards.

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

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16 Which of the following statements does *not* accurately represent the objectives of Global Investment Performance Standards (GIPS)? The GIPS standards:

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

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

C promote fair competition amongst investment management firms in all markets requiring common fee structures.

C is correct. One of the objectives of the GIPS standards is to promote fair competition among investment management firms in all markets; however, this does not require unnecessary entry barriers or hurdles for new firms such as common fee structures.

A is incorrect because the GIPS standards do ensure consistent, accurate investment performance data in areas of reporting, records, marketing, and presentations.

B is incorrect because the GIPS standards do obtain global acceptance of calculation and presentation standards in a fair, comparable format with full disclosure.

The GIPS Standards
LOS a

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17 Firms claiming compliance with GIPS standards are *most likely* required to:

A comply with all updates, interpretations, and clarifications.

B make negative assurance disclosures when presenting the firm's performance.

C meet at least 85% of the requirements before claiming compliance.

A is correct. Firms must comply with all requirements of the GIPS standards, including any updates, Guidance Statements, interpretations, Questions & Answers, and clarifications published by CFA institute and the GIPS Executive Committee.

B is incorrect because firms are not required to make negative assurance disclosures.

C is incorrect because firms must comply with all requirements of the GIPS standards, not just 85% if the requirements.

The GIPS Standards
LOS a

18 The *most* important factor in promoting ethical decision making among an investment firm's employees is:

A a strong culture of integrity by the firm's senior management.

B adoption of a code of ethics that clearly defines the firm's ethical principles.

C the investment professional's natural desire to do the right thing.

A is correct. The single most important factor in promoting ethical behavior within an investment firm is done by the development, maintenance, and demonstration of a strong culture of integrity by the firm's senior management.

B is incorrect. While adopting a code that clearly lays out the ethical principles that guide the thought processes and conduct the firm expects of its employees, a code of ethics alone is insufficient.

C is incorrect. while an investment professional's natural desire to do the right thing can be reinforced by the firm's culture of integrity, it is not the single most important factor in promoting ethical behavior.

Ethics and Trust in the Investment Profession
LOS f
Section 7

19 Monte Carlo simulation is *best* described as:

A providing a distribution of possible solutions to complex functions.

B a restrictive form of scenario analysis.

C an approach to back-test data.

A is correct. Monte Carlo simulation provides a distribution of possible solutions to complex functions. The central tendency and the variance of the distribution of solutions give important clues to decision makers regarding expected results and risk.

B is incorrect; scenario analysis shows the changes in key financial quantities that result from given economic events.

C is incorrect; it more correctly describes historical simulation.

Common Probability Distributions
LOS p
Section 4

20 A project offers the following incremental after-tax cash flows (CF):

Year	0	1	2	3	4	5	6
Cash flow (€)	–12,500	2,000	4,000	5,000	2,000	1,000	500

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

A 5.5%.

B 2.5%.

C 4.4%.

A is correct. Using a financial calculator: $CF_0 = -12{,}500$, $CF_1 = 2{,}000$, $CF_2 = 4{,}000$, $CF_3 = 5{,}000$, $CF_4 = 2{,}000$, $CF_5 = 1{,}000$, $CF_6 = 500$, and solving for IRR: IRR = 5.46867% ~ 5.5%. Alternatively, the net present value (NPV) of the given cash flows can be found by using the three possible answers.

Rate	NPV
2.5%	€1,028.38
4.4%	€355.75
5.5%	–€10.20

5.5% is closest to zero and thus closest to the IRR of the project.

B is incorrect. It adds up all the inflows as follows: (2 + 4 + 5 + 2 + 1 + 0.5) = 14.5. Then it uses 14.5 as the FV as follows: $N = 6$, PV = –12.5, FV = 14.5, PMT = 0. Solve for I/Y: $I/Y = 2.50\%$.

C is incorrect. It uses the average accounting cash flow (2 + 4 + 5 + 2 + 1 + 0.5)/6 = 2.41667 as an annuity: $N = 6$, PV = –12.5, PMT = 2.41667, FV = 0. Solve for I/Y: $I/Y = 4.41$.

Discounted Cash Flow Applications
LOS a
Section 2.2
Capital Budgeting
LOS d
Section 4.2

21 If a paired comparison test of mean differences supports rejecting the null hypothesis, then the:

A independence of the samples is statistically significant.

B standard error of the mean differences is low relative to the sample mean difference.

C difference in means is not statistically significant.

B is correct. According to the test statistic, $t = \frac{\bar{d} - \mu_{d0}}{s_{\bar{d}}}$, the lower the standard error in the denominator, the higher the value of the *t*-statistic. The *t*-statistic calculation includes the sample mean difference in the numerator. Therefore, a lower standard error (denominator) relative to the sample mean difference (numerator) results in a higher *t*-statistic value.

A is incorrect because a paired comparison test is used to test mean differences when we believe that the samples are dependent; it is not used to test whether samples are dependent or independent.

C is incorrect because if the null hypothesis is rejected, the evidence is statistically significant.

Hypothesis Testing

LOS i
Section 3.3

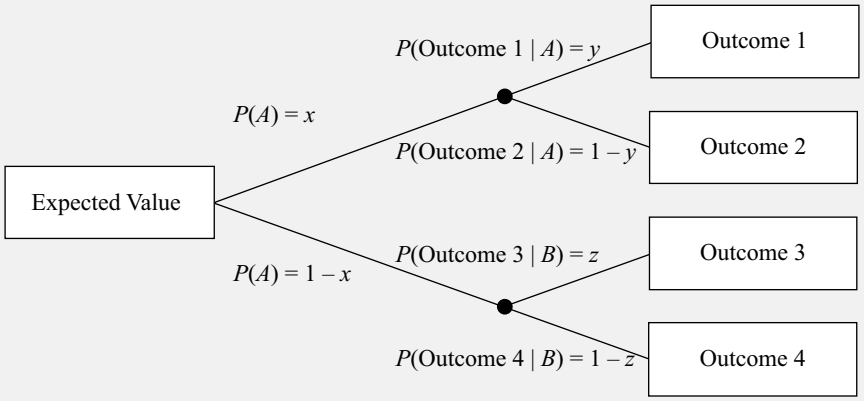
22 A tree diagram is *most likely* used when dealing with investment problems that involve outcomes that are:

A independent at each node.

B mutually exclusive.

C unconditional at each node.

B is correct. The following figure depicts an example of a tree diagram:



A tree diagram is a diagram with branches emanating from nodes representing either mutually exclusive outcomes or mutually exclusive decisions. Mutually exclusive outcomes are dependent (the occurrence of one outcome does affect the probability of occurrence of the other outcome). In addition, outcomes at each node are conditional (the probability of an outcome is conditioned on another outcome).

A is incorrect. Two outcomes are independent if the occurrence of one outcome does not affect the probability of occurrence of the other outcome. At each node of a tree diagram, the two outcomes that follow are dependent because the probability on the outcome on one branch is related to the probability of the outcome on the other branch.C is incorrect. Outcomes are unconditional when the probability of an outcome is not conditioned on another outcome. In a tree diagram, outcomes at each node are conditional (the probability of an outcome is conditioned on another outcome).

Probability Concepts
LOS a, g
Section 2

23 By definition, the probability of any Event E is a number between:

A zero and positive infinity.

B minus one and positive one.

C zero and positive one.

C is correct. The two defining properties of a probability are as follows:

1 The probability of any Event *E* is a number between zero and one.

2 The sum of the probabilities of any set of mutually exclusive and exhaustive events equals one.

A is incorrect because the probability of any event *E* is a number between 0 and 1.
B is incorrect because the probability of any event *E* is a number between 0 and 1.
Probability Concepts
LOS b
Section 2

24 Two events *A* and *B* are independent if the probability of occurrence of *A*:

A equals the product of the individual probabilities of occurrence of *A* and *B*.

B is related to the occurrence of *B*.

C does not affect the probability of occurrence of *B*.

C is correct. When two events are independent, the events are unrelated and the probability of occurrence of one event does not affect the other.

A is incorrect because when two events are independent, the joint probability of both events, not one event, equals the product of the individual probabilities of both events.

B is incorrect because an event is considered dependent when the probability of occurrence of one event is related to the occurrence of the other event.

Probability Concepts
LOS g
Section 8.2

25 Which of the following, holding all else constant, will *most likely* increase the width of the confidence interval for a parameter estimate?

A Reduction in the degree of confidence

B Increase in the sample size

C Use of the *t*-distribution rather than the normal distribution to establish the confidence interval

C is correct. Reflecting the uncertainty of the unknown variance, confidence intervals based on the *t*-distribution will be larger than those using the normal distribution because $t > z$ for any sample size, n, with the exception of $n = \infty$. Larger sample sizes and reduced confidence levels, holding all else constant, both reduce the width of a confidence interval.

A is incorrect. A reduction in the degree of confidence will decrease the width of the confidence interval (because of a smaller reliability factor).

B is incorrect. Increasing the sample size decreases the width of a confidence interval (because of a smaller standard error and, in the case of a *t*-distribution, of a smaller reliability factor).

Sampling and Estimation
LOS i, j
Sections 4.2, 4.3

26 An analyst collects the following set of 10 returns from the past:

Year	1	2	3	4	5	6	7	8	9	10
Return (%)	2.2	6.2	8.9	9.3	10.5	11.7	12.3	14.1	15.3	18.4

The geometric mean return is *closest* to:

A 10.89%.

B 10.80%.

C 9.62%.

B is correct. The geometric mean return is calculated as the *T*th root of the product of *T* terms, where the terms are one plus the returns and *T* is the number of returns. After taking the *T*th root, subtract one:

$$R_G = \left[\prod_{t=1}^{T}(1 + R_t)\right]^{\frac{1}{T}} - 1$$

where

R_G = the geometric mean return
T = the number of returns
R_t = the return in year t

$$R_G = \sqrt[10]{1.022 \times 1.062 \times 1.089 \times 1.093 \times 1.105 \times 1.117 \times 1.123 \times 1.141 \times 1.153 \times 1.184} - 1$$

= 10.80%

A is incorrect. It calculates the arithmetic mean:

$$\frac{2.2\% + 6.2\% + 8.9\% + 9.3\% + 10.5\% + 11.7\% + 12.3\% + 14.1\% + 15.3\% + 18.4\%}{10}$$

= 10.89%

C is incorrect. It uses the geometric mean formula, not the geometric mean return formula:

$$\sqrt[10]{2.2\% \times 6.2\% \times 8.9\% \times 9.3\% \times 10.5\% \times 11.7\% \times 12.3\% \times 14.1\% \times 15.3\% \times 18.4\%}$$

= 9.62%

Statistical Concepts and Market Returns
LOS e
Section 5.4

27 Common stock prices are approximately lognormally distributed. Therefore, it is *most likely* that conventional (discrete) common stock prices are:

A leptokurtic.

B skewed to the right.

C skewed to the left.

B is correct. The lognormal distribution is truncated at zero and skewed to the right (positively skewed).

A is incorrect because a leptokurtic distribution has thick tails on both sides of the distribution.

C is incorrect because the lognormal distribution is truncated at zero and is positively skewed.

Statistical Concepts and Market Returns
LOS j, l
Sections 8–9
Common Probability Distributions
LOS n
Section 3.4

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28 In Elliott Wave Theory, Wave 2 commonly exhibits a pattern *best* described as a(n):

A basing pattern consisting of five smaller waves.

B Fibonacci ratio percentage retracement composed of three smaller waves.

C uptrend moving above the high of Wave 1 and consisting of five smaller waves.

B is correct. Wave 2 is a correction, retracing much of the gain from Wave 1, but not all of it. The lost proportion is usually a percentage equal to a Fibonacci ratio, and it consists of three smaller waves.

A is incorrect because it describes Wave 1. Waves 1, 3, and 5 are uptrends, but Waves 2 and 4 are corrections.

C is incorrect because it describes Wave 3. Waves 1, 3, and 5 are uptrends, but Waves 2 and 4 are corrections.

Technical Analysis
LOS g
Section 4

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29 Once an investor chooses a particular course of action, the value forgone from alternative actions is *best* described as a(n):

A sunk cost.

B required return.

C opportunity cost.

C is correct. An opportunity cost is the value that investors forgo by choosing a particular course of action.

A is incorrect. A sunk cost is one that has already been incurred and therefore cannot be changed

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

The Time Value of Money
LOS a
Section 2

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30 An investor deposits £2,000 into an account that pays 6% per annum compounded continuously. The value of the account at the end of four years is *closest* to:

A £2,854.

B £2,525.

C £2,542.

C is correct. The future value (FV) of a given lump sum, calculated using continuous compounding, is: $FV = PVe^{rN} = 2{,}000 \times e^{0.06 \times 4} = £2{,}542.49 \sim £2{,}542$.

A is incorrect. It is calculated as: $\ln(0.06 \times 4) \times 2{,}000 = -2{,}854.23$ and ignores the negative sign of the logarithm.

B is incorrect. It uses annual compounding: $2{,}000 \times (1 + 0.06)^4 = 2{,}524.95$.

The Time Value of Money

LOS d, e

Section 3.2

31 The CFA Institute Code of Ethics and Standards of Professional Conduct are *most likely* designed to foster and reinforce a culture of:

A responsibility and professionalism.

B regulatory compliance.

C service to the firm.

A is correct. The CFA Institute Code of Ethics and Standards of Professional Conduct are designed to foster and reinforce a culture of responsibility and professionalism. The Code and Standards apply to all members and candidates regardless of title, position, occupation, geographic location, or specific situation, and they apply to all professional activities of investment professionals.

B is incorrect. The CFA Institute Code of Ethics and the Standards of Professional Conduct are not designed to foster and reinforce a culture of regulatory compliance.

C is incorrect. The CFA Institute Code of Ethics and the Standards of Professional Conduct are not designed to foster and reinforce a culture of service to the firm.

Ethics and Trust in the Investment Profession

LOS b

Section 3

32 A research report produced by a dealer includes the following exchange rates:

	Spot Rate	Expected Spot Rate in One Year
USD/EUR	1.3960	1.3860
USD/CAD	1.0110	1.0300
EUR/GBP	1.2850	1.2790

The expected appreciation (%) of the Canadian dollar (CAD) relative to the British pound (GBP) is *closest* to:

A –3.00

B 3.09.

C 0.70.

B is correct.

	Spot Rate	Expected Spot Rate in One Year	Appreciation: Expected/Spot – 1
USD/EUR	1.3960	1.3860	–0.72%
USD/CAD	1.0110	1.0300	1.88%
EUR/GBP	1.2850	1.2790	–0.44%
CAD/GBP	=	**[(USD/EUR) × (EUR/GBP)]/(USD/CAD)**	
CAD/GBP	1.7743	1.7211	–2.99%
GBP/CAD*	0.5636	0.5810	**3.09%**

* Canadian dollar is the base currency and the British pound is the price currency

CAD/GBP = [(USD/EUR) × (EUR/GBP)]/(USD/CAD)
Spot Rate of CAD/GBP = (1.3960 × 1.2850)/1.0110 = 1.7743
Expected Spot Rate of CAD/GBP = (1.3860 ×1.2790)/1.0300 = 1.7211

To determine the appreciation of the Canadian dollar (CAD) relative to the British pound, the British pound (GBP) is the price currency and the Canadian dollar is the base currency, giving rise to the following calculation:

$$\frac{1/1.7211}{1/1.7743} - 1 = \frac{1.7743}{1.7211} - 1 = 3.09\%$$

B is incorrect. It calculates the spot and expected spot rates correctly, but uses GBP as the base currency: Appreciation of CAD/GBP = 1.7211/1.7743 – 1 = –3.00%.

C is incorrect. The appreciation of the individual exchange rates are summed: –0.72 +1.88 – 0.44 = 0.72.

Currency Exchange Rates
LOS d
Section 3.2

33 The following information is available:

New Zealand dollar (NZD) to British pound (GBP) spot exchange rate: 2.0979

Libor interest rates for the British pound: 1.6025%

Libor interest rates for the New Zealand dollar: 3.2875%

All Libor interest rates are quoted on a 360-day year basis

The 180-day forward points (scaled up by four decimal places) in NZD/GBP is *closest* to:

A 39.

B 348.

C 176.

C is correct. Covered interest arbitrage will ensure identical terminal values by investing the same initial amounts at the respective country's domestic interest rates:
GBP investment: £1 × (1 + 0.016025 × 180/360) = £1.008013
NZD investment: NZ$2.0979 × (1 + 0.032875 × 180/360) = NZ$2.13238
The forward rate is determined by equating these two terminal amounts:
NZD/GBP forward rate = NZ$2.13238/£1.008013 = 2.115429

$$\begin{aligned}\text{Forward points} &= (\text{Forward} - \text{Spot}) \times 10{,}000\\ &= (2.1155 - 2.0979) \times 10{,}000\\ &= 175.3 = 176 \text{ (rounded)}\end{aligned}$$

A is incorrect. It inverts the currencies.
GBP investment: £2.0979 × (1 + 0.016025 × 180/360) = £2.1147
NZD investment: NZ$1 × (1 + 0.032875 × 180/360) = NZ$1.0164
The forward rate is determined by equating these two terminal amounts:
NZD/GBP forward rate = NZ$1.0164/£2.1147 = 0.4806
Inverted Spot: 1/2.0979 = 0.47667

$$\begin{aligned}\text{Forward points} &= (\text{Forward} - \text{Spot}) \times 10{,}000\\ &= (0.4806 - 0.4767) \times 10{,}000\\ &= 39\end{aligned}$$

B is incorrect. It ignores the half-year time frame of the contract:
GBP investment: £1 × (1 + 0.016025) = £1.016025
NZD investment: NZ$2.0979 × (1 + 0.032875) = NZ$2.16687
NZD/GBP forward rate = NZ$2.16687/£1.016025 = 2.1327

$$\begin{aligned}\text{Forward points} &= (\text{Forward} - \text{Spot}) \times 10{,}000\\ &= (2.1327 - 2.0979) \times 10{,}000\\ &= 347.9\end{aligned}$$

Currency Exchange Rates
LOS e, h
Section 3.3

34 The following international trade information is available for a hypothetical economy:

	Exports	Imports
Initial Value (DCU)	4,800	6,500
Demand elasticity	0.70	0.55

DCU: domestic currency units

Following a 12% depreciation in the DCU, the trade balance will be *closest* to:

A –1,726.

B –1,648.

C –1,674.

B is correct. Impact on trade balance:

Total Trade = Exports + Imports = 4,800 + 6,500 = 11,300

ω_X = share of exports
= 4,800/11,300 = 0.425
ω_M = share of imports
= 6,500/11,300 = 0.575
ε_{ML} = Marshall–Lerner trade-weighted elasticity
= $\omega_X\varepsilon_X + \omega_M(\varepsilon_M - 1)$
= $(0.425 \times 0.70) + 0.575 \times (0.55 - 1)$ = **0.039**

Change in Trade Balance using Marshall–Lerner trade-weighted elasticity:
ε_{ML} × Trade Balance × Depreciation = 0.039 × 11,300 × 0.12 = 52.5
New trade balance = 4,800 – 6,500 + 52.5 = –1,647.5 = –1,648
Since the Marshall–Lerner condition is greater than 0, depreciation will reduce the trade deficit.

Alternatively, the change in the trade balance can be calculated from % changes in imports and exports:

Decrease in imports:	–(12% × (1 – 0.55) × 6,500) =	–351.0
Increase in exports:	12% × 0.70 × 4,800 =	403.2
Difference		**52.2**
Change in trade balance	4,800 – 6,500 + 52.2 =	**–1,648** (rounded)

A is incorrect. It applies the demand elasticities on current levels, but ignores sign of depreciation: –26
New trade balance: –1,700 – 26 = –1,726
C is incorrect. It applies the demand elasticities on current levels and uses (–) sign for 12%.
Change in trade balance: –12% × [(4,800 × 0.70) – (6,500 × 0.55)] = 26
New trade balance: –1,700 +26 = –1,674
Currency Exchange Rates
LOS j
Section 5.1
Topics in Demand and Supply Analysis
LOS a
Section 2.2
The Firm and Market Structures
LOS b
Section 3.1.1

35 Which of the following *best* describes a function of the International Bank for Reconstruction and Development?

A Lending foreign currencies on a temporary basis to address balance of payment issues

B Regulating cross-border trade relationships on a global scale

C Providing low interest rate loans to developing countries

C is correct. Closely affiliated with The World Bank Group, the International Bank for Reconstruction and Development (IBRD) provides low or no-interest loans and grants to developing countries that have unfavorable credit or no access to international credit markets.

A is incorrect. This is a function of the IMF.

B is incorrect. This is a function of the World Trade Organization.

International Trade and Capital Flows

LOS j

Sections 5.1, 5.2

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36 Which of the following is *least likely* to be a valid function/characteristic of money? Money:

A provides a store of wealth.

B requires a double coincidence of wants.

C acts as a unit of account.

B is correct. The functions of money include being a means of payment, acting as a medium of exchange, and acting as a unit of account. It does not require a double coincidence of wants, as barter does, because it is easily divisible and can act as a medium of exchange.

C is incorrect. The functions of money include acting as a unit of account.

A is incorrect. The functions/characteristics of money include store of wealth.

Monetary and Fiscal Policy

LOS b

Section 2.1

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37 An advantage of indirect taxes as a fiscal policy tool is that such taxes:

A have a greater impact on aggregate spending and output than direct government spending.

B can be adjusted almost immediately.

C minimize interference with consumer choices.

B is correct. Indirect taxes, which are taxes on spending including excise taxes on fuel, alcohol, and tobacco as well as taxes on gambling winnings, can be adjusted almost immediately after they are announced and can influence spending behavior instantly.

A is incorrect because direct government spending has a far bigger impact on aggregate spending and output than tax cuts or transfer increases.

C is incorrect because indirect taxes support social policies that are specifically aimed at influencing and deterring consumer choices related to such consumption and activities.

Monetary and Fiscal Policy

LOS p

Section 3.2 and 3.2.1

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38 The following data apply to a firm operating in perfect competition.

Quantity	Total Revenue	Total Cost
21	$210	$138
22	$220	$145
23	$230	$154
24	$240	$165

The firm's profit maximizing output (in units) is *most likely*:

A 23.

B in excess of 24.

C 21.

A is correct. Under perfect competition, economic profits are maximized when marginal revenue equals marginal cost—in this case, marginal cost crosses $10 per unit. Profits are maximized at 23 units of production because marginal cost is in excess of marginal revenue at 24 units.

C is incorrect. It represents the minimum total cost point for the given data, not the profit maximizing point.

B is incorrect. At and beyond 24 units, marginal costs exceed marginal revenue.

The Firm and Market Structures
LOS d
Section 3.3

39 Which of the following statements with respect to Giffen and Veblen goods is *least* accurate?

A Giffen goods are "inferior," whereas Veblen goods are "high-status" goods.

B The highly negative income effect overpowers the substitution effect for both types of goods.

C Both types of goods demonstrate the possibility of a positively sloping demand curve.

B is correct. The overwhelming nature of the highly negative income effect over the substitution effect is applicable to Giffen goods only. Veblen goods are highly valued, high-priced "status" goods; consumers may tend to buy more of a Veblen good if its price rises.

A is incorrect. It is true that Giffen goods are "inferior" whereas Veblen goods are "high-status" goods.

C is incorrect. It is true that both Giffen goods and Veblen goods demonstrate the possibility of a positively sloping demand curve.

Topics in Demand and Supply Analysis
LOS c, b
Sections 2.6

40 The most recent economic data release indicates the following:

- capital spending is expanding rapidly, but the growth rate of spending has begun to slow down; and

- the rate of hiring has slowed, but the unemployment rate continues to fall.

The economy is *most likely* in which of the following phases?

A Peak

B Late expansion

C Contraction

A is correct. During the peak phase of the business cycle, capital spending expands rapidly, but the rate of growth of consumer and business spending slows down; in addition, during the peak, businesses slow their rate of hiring, but the unemployment rate continues to fall.

B is incorrect. In the late expansion phase businesses begin to order heavy equipment and engage in construction; in addition, businesses begin full time rehiring as overtime hours rise. The unemployment rate falls to low levels

C in incorrect. In the contraction phase there are cutbacks in orders for new business equipment and other forms of capital spending. In addition, businesses first cut hours and freeze hiring, followed by outright layoffs and an increase in the unemployment rate.

Understanding Business Cycles
LOS a
Section 2.1

41 The consumer price index (CPI) this year is 252. The CPI last year was 246. The inflation rate this year is *closest* to:

A 6.00%.

B 2.38%.

C 2.44%.

C is correct. The inflation rate is measured as [(CPI this year – CPI last year)/CPI last year] × 100. In this case, [(252 – 246)/246] × 100 = 2.439%.

A is incorrect. It is the difference between the two CPI numbers.
B is incorrect. It uses 252 in the denominator instead of 246.
Understanding Business Cycles
LOS e
Section 4.2

42 The price index that *best* resolves the substitution bias is the:

A Fisher index.

B Laspeyres index.

C Paasche index.

A is correct. The Fisher index is tje geometric mean of the Laspeyres and Paasche indexes, and it will therefore display less of a substitution bias than the other two. Both the Laspeyres index and the Paasche index ignore the substitution effect whereby people may substitute higher priced goods or services with cheaper ones. The Laspeyres index uses the historical composition of a basket of goods, making it upward biased relative to

the true inflation rate; the Paasche index uses the current composition of the basket with cheaper options replacing more expensive ones, making it downward biased relative to the true inflation rate.

B is incorrect. The Laspeyres index creates an upward bias relative to the true inflation rate, and the Paasche index creates a lower bias because both ignore the substitution effect whereby people may substitute higher priced goods or services with cheaper ones. The Fisher index is the geometric mean of the two indexes, and it will therefore display less of a substitution bias than the other two.

C is incorrect. The Laspeyres index creates an upward bias relative to the true inflation rate, and the Paasche index creates a lower bias because both ignore the substitution effect whereby people may substitute higher priced goods or services with cheaper ones. The Fisher index is the geometric mean of the two indexes, and it will therefore display less of a substitution bias than the other two.

Understanding Business Cycles
LOS f, g
Section 4.2.2

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43 A positive movement in a lagging indicator would *least likely* be used to:

A confirm that an expansion is currently underway.

B identify a past condition of the economy.

C identify an expected future economic upturn.

C is correct. A positive movement in a lagging indicator would most likely be used to confirm that an existing expansion is underway or has already occurred. Only a leading indicator would help identify or predict a future economic event.

A is incorrect. A positive move in a lagging indicator by itself is insufficient to indicate a positive expansion. However, confirmation would be required from positive changes in a coincident indicator to indicate expansion.

B is incorrect. A positive move in a lagging indicator is most likely identifying an upturn in economic activity that occurred in the past.

Understanding Business Cycles
LOS i
Section 5

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44 By themselves, financial ratios are *least likely* to be sufficient in determining a company's:

A past performance.

B creditworthiness.

C current financial condition.

B is correct. Financial ratios alone are not sufficient to determine the creditworthiness of a company. Other factors must also be considered, such as examining the entire operation of the company, meeting with management, touring company facilities, and so forth.

A is incorrect because ratio analysis by itself does enable a financial analyst to evaluate past performance.

C is incorrect because ratio analysis by itself does enable the assessment of a company's current financial position.

Financial Analysis Techniques

LOS a, e
Sections 3.1.2, 6.1

45 The following information is available about a conglomerate and one of its reportable operating segments:

	Segment A ($ millions)	Total ($ millions)
Assets	300	6,000
Liabilities	100	4,000
Capital expenditures	140	550
Revenue	1,250	12,000
Expenses	1,160	11,000
Operating profit	90	1,000

The element of Segment A's financial statement excerpts that *most likely* causes it to qualify as a reportable segment is its:

A capital expenditures.

B assets.

C revenue.

C is correct. Segment A most likely qualifies as a reportable segment because its revenue amounts to 10.4% of total revenues, which is above the 10% threshold for the revenue test.

A is incorrect. The qualifying elements are assets, revenues, and operating profit. Segments are not qualified based on capital expenditures.

B is incorrect. Segment A's assets amount to 5% of total assets, which falls below the 10% threshold.

Financial Analysis Techniques
LOS f
Section 7.1

46 Which of the following conditions conducive to issuing low-quality financial reports is *most likely* a result of poor internal controls?

A Rationalization

B Opportunity

C Motivation

B is correct. Poor internal controls provide opportunities for errors or fraud to be incorporated in financial reporting without being detected.

A is incorrect. Rationalization takes place after the low-quality reporting act has taken place and is a psychological process used by individuals to justify their actions. Poor internal controls are not a psychological process.

C is incorrect. Motivation results from personal pressures or corporate pressures to report on a low-quality basis. Poor internal controls provide the vehicle through which low-quality reporting can be concealed, not the motivation for it.

Financial Reporting Quality

LOS e
Section 3.2

47 Which of the following approaches will *most likely* reveal manipulation of financial reporting?

A Using EBITDA to adjust for non-recurring items

B Evaluating potential warning signals in isolation

C Comparing a company's methods and policies to those of its peers

C is correct. An investor should compare a company's policies with those of its peers to determine whether its approaches match or differ from industry norms; if a company is the only one in its industry following a particular approach, a red flag is raised.

A is incorrect because companies may construct or report their own version of EBITDA. Thus, adjusting EBITDA for a non-recurring item, in and of itself, does not reflect or reveal manipulation or financial reporting.

B is incorrect because investors need to evaluate warning signals cohesively, not on an isolated basis.

Financial Reporting Quality
LOS i
Sections 4.2.3, 4.3

48 Which of the following is *least* consistent with the goals of accounting standards developed under the joint conceptual framework project of the International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB)? Accounting standards should be:

A principles based.

B developed independently.

C internally consistent.

B is correct. Under the joint conceptual framework project of the IASB and the FASB, accounting standards should be principles based, internally consistent, and converged. The goal of the joint framework is to move away from the independent development of accounting standards.

A is incorrect. Accounting standards should be principles based.
C is incorrect. Accounting standards should be internally consistent.
Financial Reporting Standards
LOS a
Section 2

49 To evaluate the potential effect of an innovative and unique type of business transaction on financial statements, an analyst's *best* approach is to:

A monitor the actions of standard setters and regulators.

B gain an understanding of the transaction's economic purpose.

C consider the approach taken for "new" transactions that arose in the past.

B is correct. By understanding the economic purpose of a transaction and applying the conceptual framework, an analyst may be able to evaluate the potential effect on financial statements, even in the absence of specific standards.

A is incorrect. Given the lag between new product development and regulatory action, the actions of standard setters and regulators are unlikely to be helpful when the new transactions initially arise.

C is incorrect. New types of transactions have unique elements that distinguish them from the transactions that arose previously. They may or may not affect the financial statements in the same way.

Financial Reporting Standards
LOS h
Section 8.1

50 An analyst uses a stock screener and selects the following metrics from his equity universe:

- price-to-equity ratio lower than the median P/E
- price-to-book value ratio lower than the median P/BV

The stocks selected would be *most* appropriate for portfolios for which type of investors?

A Value investors

B Growth investors

C Market-oriented investors

A is correct. Metrics such as low P/E and low P/BV are aimed at selecting value companies; therefore, the portfolio is most appropriate for value investors.

B is incorrect. Growth investors would include metrics focused on earnings growth or momentum, such as sales increases for the past three years.

C is incorrect. Screens for market-oriented investors would not emphasize the value metrics included in this screen.

Financial Statement Analysis: Applications
LOS d
Section 5
Security Market Indexes
LOS k
Section 5.4

51 Which of the following events will *most likely* result in a decrease in a valuation allowance for a deferred tax asset under US GAAP? A(n):

A decrease in interest rates

B reduction in tax rates

C extension in the tax loss carry-forward period

C is correct. Under US GAAP, deferred tax assets must be assessed at each balance sheet date. If there is any doubt whether the deferral will be recovered, the carrying amount should be reduced to the expected recoverable amount. The asset is reduced by increasing

the valuation allowance. Should circumstances change so that it is more probable that the deferred tax benefits will be recovered, the deferred asset account will be increased (and the valuation allowance decreased). An increase in the carry-forward period for tax losses extends the possibility that benefits will be realized from the deferred tax asset and would likely result in a decrease in the valuation allowance and an increase in the deferred tax asset.

A is incorrect. Interest rate changes are not related; there is no discounting of the future benefits from the deferred tax asset.

B is incorrect. A reduction in tax rates will permanently decrease the carrying value of the deferred tax asset; deferred tax assets and liabilities arise only from temporary differences.

Income Taxes
LOS g
Sections 3.3, 6.1

52 Selected information from a company that uses the FIFO inventory method is provided:

Event	Units	$/Unit	Total ($)
Opening inventory	1,000	7.50	7,500
First purchase	250	7.60	1,900
Sales	550	12.00	6,600
Second purchase	300	7.70	2,310
Sales	600	12.00	7,200
Ending inventory	400		

If the company used a perpetual system versus a periodic inventory system, the gross margin would *most likely* be:

A higher.

B lower.

C the same.

C is correct. When using the FIFO inventory method, the ending inventory, the cost of goods sold, and the gross margin are the same under either the perpetual or periodic methods. The use of a perpetual or periodic system makes a difference under the weighted average and LIFO methods.

A is incorrect. When using the FIFO inventory method, the cost of goods sold, and hence the gross margin, are the same under either the perpetual or periodic methods.

B is incorrect. When using the FIFO inventory method, the cost of goods sold, and hence the gross margin, are the same under either the perpetual or periodic methods.

Under either method the oldest items are sold first. The first sale is 550 at $7.50. The next sale is 450 at $7.50 + 150 at $7.60. The perpetual and periodic methods make a difference under weighted average and LIFO.

Inventories
LOS c
Section 3.6

53 The following information is available for a manufacturing company:

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

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

A $0.3 higher.

B $0.3 lower.

C the same.

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

A is incorrect. The write-down is larger under US GAAP, so IFRS gross profit would be higher, not lower.

C is incorrect. IFRS and US GAAP define market differently. As current replacement cost (US GAAP definition is lower than NRV) the effect is not the same.

Inventories
LOS g
Section 6

54 If an analyst is concerned about the liquidity of a company's inventory, he would *most likely* look in the notes to the financial statements to determine the:

A amount of inventories recognized as expense during the period.

B cost formula or inventory valuation method used.

C breakdown of inventory between work in progress and finished goods.

C is correct. The breakdown between work in progress and finished goods provides liquidity information because finished goods are ready to ship and thus more liquid than work in progress.

A is incorrect. The amount of inventories expensed as cost of goods sold has no effect on the liquidity of the inventory on hand.

B is incorrect. The inventory valuation method used is unrelated to the liquidity of the inventory.

Inventories
LOS j
Section 7.1

55 The following information is available concerning a new showroom a company built. Construction started on 1 January 2012, and the grand opening was on 1 January 2014:

Loan: Funds borrowed on 1 January 2012 and put to use immediately	€30 million
Interest rate on loan	8%, payable annually
Repayment terms for loan	Balloon payment, due on 1 January 2017
Total construction costs incurred during 2012 and 2013	€38.5 million
Expected useful life of the showroom	40 years
Expected residual value of the showroom	€5 million
Depreciation method	Straight line

The depreciation expense (in millions) for the showroom in 2014 is *closest* to:

A €1.0175.

B €0.9575.

C €0.8375.

B is correct. Because the asset is self-constructed, the costs of specifically identifiable interest during the construction period can be capitalized and included in the cost of the showroom.

	€ millions
Construction costs	38.5
Interest expense in 2012 and 2013: 0.08 × €30 × 2 years	4.8
Total capitalized cost	43.3
Straight line depreciation expense: (Capitalized cost – Residual value)/Useful life = (43.3 – 5.0)/40	**0.9575**

A is incorrect. It continues to capitalize the interest in 2014: (43.3 + 2.4 – 5.0)/40 = 1.0175.

C is incorrect. It does not include the capitalized interest: (38.5 – 5)/40 = 0.8375.

Long-Lived Assets
LOS a, d
Sections 2.1, 3.1

56 At the end of the year, a company revalued its manufacturing facilities, increasing their carrying amount by 12%. There had been no prior downward revaluation of these facilities. The revaluation will *most likely* cause the company's:

A return on assets to increase.

B return on equity to decline.

C net profit margin to increase.

B is correct. The upward revaluation increases the carrying amount of the assets but bypasses net income. The revaluation is reported as other comprehensive income and will be accumulated in equity under the heading of revaluation surplus, increasing equity. This increase will cause the return on equity to decline.

A is incorrect. The upward revaluation causes an increase in the carrying amount of the assets but bypasses net income and is reported as other comprehensive income (under the heading of revaluation surplus), increasing equity. This will cause the return on assets to decline (same income, higher assets).

C is incorrect. The upward revaluation causes an increase in the carrying amount of the assets but bypasses net income and is reported as other comprehensive income (under the heading of revaluation surplus), increasing equity. This will cause Net Income/Sales to be unaffected.

Long-Lived Assets
LOS k, h
Section 4

57 A technology company, reporting under US GAAP, has three classes of intangible assets. The table below shows information on each of the three classes.:

Accumulated Impairment Losses and Amortization (Currency in USD)

(in thousands)	Goodwill	Licenses	Computer Software
31 December 2019	65,321	8,243	5,257
Exchange movements	7,324	821	334
Amortization charge for year	—	1,244	2,102
Net additions (disposals)	—	(25)	—
Impairment charge for the year	?	?	?
31 December 2020	73,194	10,856	8,214

Based on the data provided, the intangible asset that has the largest absolute impairment charge for the period ended 31 December 31 2020, is:

A computer software.

B licenses.

C goodwill.

B is correct. Licenses will have the largest dollar impairment charge on the income statement due to the size of the implied impairment charge, which is calculated as: Accumulated impairment losses and amortization as of 31 December 2019 – (Accumulated impairment losses and amortization as of 31 December 2019 + Exchange movements + Amortization charge for year + Net Additions (Disposals)). In this case the largest impairment loss that will be reported is due to licenses. Impairment charge due to licenses = 10,856 – (8,243 + 821 + 1,244 – 25) = 573.

A is incorrect because the amount of the impairment charge due to computer software is less than that of licenses. The computer software impairment charge for 20X2 in dollars = 8,214 – (5,257 + 334 + 2,102) = 521.

C is incorrect because the amount of the impairment charge due to goodwill is less than that of licenses. The goodwill impairment charge for 20X2 in dollars = 73,194 – (65,321 + 7,324) = 549.

Long-Lived Assets
LOS m
Section 7

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

A $257.

B $0.

C $348.

A is correct.

Interest paid = Coupon rate at issue × Issued amount of bonds = 9% × $50,000 = 4,500
Interest expense = Market rate at issue × Carrying (book value) of bonds
Amortization of discount = Interest expense – Interest paid

Year	Interest Paid (9%)	Interest Expense (10%)	Amortization of Discount	Carrying Value
0				47,565
1	4,500	4,757	257	47,822

Amortization of the bond discount in the first year is $257.

B is incorrect. By the end of the first year, the bonds were selling at par. This is irrelevant for the amortization because the interest expense for the period is based on the carrying value (BV) not the market value; 0 assumes that the bond is at par and no amortization is required.

C is incorrect. It uses the straight-line depreciation of the discount: ($50,000 – $47,566)/7 = $348.

Non-Current (Long-Term) Liabilities
LOS b
Section 2.2

59 Which of the following statements about balance sheets is *most* accurate? For balance sheets prepared under:

A IFRS, a classified balance sheet must present current assets before non-current assets.

B US GAAP, intangibles must be valued at historical cost.

C IFRS, a commercial real estate company should use a liquidity based presentation.

B is correct. Under US GAAP, intangibles must be valued at historical cost; under IFRS they can be valued at cost or revaluation.

A is incorrect. Under IFRS, a classified balance sheet does separate current assets from non-current assets, but non-current assets could be presented first.

C is incorrect. A commercial real estate company would have many non-liquid assets and would not likely use the liquidity-based presentation under IFRS. A commercial bank would use this format.

Understanding Balance Sheets
LOS c, e
Sections 2.2, 2.3, 4.3

60 Which of the following statements about cash flow ratios is *most* valid?

A Reinvestment ratio measures a firm's ability to acquire assets with investing cash flows.

B Debt payment ratio measures a firm's ability to pay debts with operating cash flows.

C Interest coverage ratio is calculated as operating cash flow divided by interest payments.

B is correct. Debt payment ratio (Cash flow from operations/Cash paid for long-term debt repayment) shows the firm's ability to pay debts with operating cash flows.

C is incorrect. Interest coverage ratio is calculated as (CFO + Interest paid + Taxes paid)/Interest paid. It measures the firm's ability to meet interest obligations.

A is incorrect. Reinvestment ratio (CFO/Cash paid for long-term assets) shows the firm's ability to acquire assets with operating cash flows.

Understanding Cash Flow Statements
LOS i
Section 4.4
Financial Analysis Techniques
LOS b
Sections 4.4.1, 4.4.2

61 The following data are available on a company for the current year:

Metric	£ thousands
Comprehensive income	246,000
Dividends paid	60,000
Ending retained earnings	821,000
Opening retained earnings	580,000

The company will *most likely* report other comprehensive income (OCI) (in £ thousands) as a:

A loss of 55,000.

B gain of 186,000.

C gain of 301,000.

A is correct.

Metric	£ thousands
Ending retained earnings	821,000
Less: opening retained earnings	(580,000)
Add back: dividends paid	60,000
Net income	301,000
Comprehensive income	246,000
OCI = Comprehensive income – net income	**55,000 LOSS**

B is incorrect. This is comprehensive income less dividends (£246,000 – £60,000 = £186,000).

C is incorrect. This is net income.

Understanding Income Statements

LOS l

Section 8

62 A project has the following annual cash flows:

Year 0	Year 1	Year 2	Year 3	Year 4
–$75,000	$21,600	$23,328	$37,791	$40,815

With a discount rate of 8%, the discounted payback period (in years) is *closest* to:

A 3.0.

B 3.2.

C 2.8.

B is correct.

Year	Cash Flow (CF_n)	Discounted Cash Flow @ 8% [$CF_n/(1.08)^n$]	Amount to Pay Back (CF_0 – Cumulative PV cash flows)
0	–$75,000	–$75,000	$75,000
1	21,600	20,000	55,000
2	23,328	20,000	35,000
3	37,791	30,000	5,000
4	40,815	30,000	

The first three cash flows recover $70,000 (in present value terms) of the cost, making only $5,000 of the $30,000 in Year 4 necessary to completely recover the cost. Therefore, the discounted payback is three years plus 5000/30,000, or 3.2 years.

C is incorrect because it is the payback period.
A is incorrect because it is the payback period without interpolation.
Capital Budgeting
LOS d
Section 4

63 In an acquisition, the interests of minority shareholders are *best* protected through the use of:

A sell-out rights.

B clawback provisions.

C covenants within indentures.

A is correct. Sell-out rights protect minority shareholders in acquisition situations by forcing acquirers to buy out minority shareholders at a fair price, even if those shareholders initially voted against the acquirer's offer.

B is incorrect. Clawback provisions allow companies to recover executive remuneration under certain circumstances, to the benefit of all shareholders.

C is incorrect. Covenants are the terms and conditions of lending agreements, enabling creditors to specify the actions an issuer is obligated to perform or is prohibited from performing. They are put in place to protect creditors.

Corporate Governance and ESG: An Introduction
LOS e
Section 4.2.1

64 Which of the following is the *best* example of a good corporate governance practice?

A Independent board members are prior, but not current employees of the firm.

B Supervisory and management boards have overlapping membership.

C The chief executive position is separate from the chair position on the company's board.

C is correct. The CEO and board chair roles should be separated to prevent too much executive power.

A is incorrect. Former employees are not independent board members.

B is incorrect. Supervisory and management boards should be independent of each other.

Corporate Governance and ESG: An Introduction
LOS f
Section 5.1

65 Which of the following features is *most likely* to be found in a well-structured executive compensation plan?

A Links to factors that drive overall corporate performance

B Reasonably consistent total compensation from year to year

C Higher total remuneration relative to peer companies with comparable performance

A is correct. Plans that link compensation to the factors that drive overall corporate performance are well structured because they create alignment between shareholder and executive objectives.

B is incorrect. Plans that exhibit little variation in results from year to year may be failing to distinguish strong from weak performance.

C is incorrect. Compensation plans should result in comparable remuneration for comparable companies with comparable performance.

Corporate Governance and ESG: An Introduction
LOS i
Section 8.3

66 The cost of which source of capital *most likely* requires adjustment for taxes in the calculation of a firm's weighted average cost of capital?

A Common stock

B Preferred stock

C Bonds

C is correct. Bonds are a form of debt that must be adjusted for taxes when calculating the weighted average cost of capital.

A is incorrect because adjustment for taxes is applicable for the cost of debt and not in the cost of equity.

B is incorrect because adjustment for taxes is applicable for the cost of debt and not in the cost of equity.

Cost of Capital
LOS b
Section 2.1

67 The optimal capital budget for a firm is *best* described as occurring when the company's marginal cost of capital is:

A equal to the investment opportunity schedule.

B less than the investment opportunity schedule.

C greater than the investment opportunity schedule.

A is correct. The optimal capital budget occurs when the marginal cost of capital (MCC) intersects with (is equal to) the investment opportunity schedule (IOS).

B is incorrect. The optimal capital budget occurs when the marginal cost of capital (MCC) intersects with (is equal to) the investment opportunity schedule (IOS).

C is incorrect. The optimal capital budget occurs when the marginal cost of capital (MCC) intersects with (is equal to) the investment opportunity schedule (IOS).

Cost of Capital
LOS d
Section 2.3

68 A company that wants to determine its cost of equity gathers the following information:

Rate of return on 3-month Treasury bills	3.0%
Rate of return on 10-year Treasury bonds	3.5%
Market risk premium	6.0%
The company's equity beta	1.6
Dividend growth rate	8.0%
Corporate tax rate	35%

Using the capital asset pricing model (CAPM) approach, the cost of equity (%) for the company is closest to:

A 12.6%.

B 7.5%.

C 13.1%.

C is correct. CAPM: Cost of equity = Risk-free rate + Beta × Market risk premium = 3.5% + 1.6 × (6.0%) = 13.1%

The 10-year risk-free rate is appropriate based on the long-term duration of the cash flows from the project.

B is incorrect. Deducting the risk-free rate from the market risk premium would lead to: 3.5% + 1.6 × (6.0% – 3.5%) = 7.5%

A is incorrect. If the 90-day T-Bill rate is used as the risk-free rate, the answer will be: 3.0% + 1.6 × (6.0%) = 12.6%

Cost of Capital

LOS h

Section 3.3.1

69 A company intends to issue new common stock with floatation costs of 5.0% per share. The expected dividend next year is $0.32, and the dividend growth rate is expected to be 10% in perpetuity. Assuming the shares are issued at a price of $14.69, the cost (%) of external equity for the firm is *closest* to:

A 12.2.

B 12.5.

C 12.3.

C is correct. Use the following formula:

$$r_e = \left[\frac{D_1}{P_0(1-f)}\right] + g$$

$$0.1229 = \left[\frac{\$0.32}{\$14.69(1-0.05)}\right] + 0.10$$

where

D_1 = Expected dividend

P_0 = Current price

f = Flotation costs

g = Growth rate

A is incorrect because it does not include floatation costs.

B is incorrect because it treats D_1 as the current dividend making it equal \$0.32 × (1 + 0.10) in the equation.
Cost of Capital
LOS h, l
Sections 3.3.2, 4.4

70 The following information is available for a company and the industry in which it competes:

	Company	Industry
Accounts receivable turnover	5.6 times	6.5 times
Inventory turnover	4.2 times	4.0 times
Number of days of payables	28 days	36 days
Operating cycle	?	147 days
Cash conversion cycle	124 days	?

Relative to the industry, the company's operating cycle:

A is shorter, but its cash conversion cycle is longer.

B and cash conversion cycle are both longer.

C is longer, but its cash conversion cycle is shorter.

B is correct. Operating cycle = Number of days of inventory + Number of days of receivables. Cash conversion cycle = Operating cycle – Number of days of payables.

	Company	Industry
Number of days receivables	365/5.6 = 65 days	365/6.5 = 56 days
Number of days inventory	365/4.2 = 87 days	365/4.0 = 91 days
Operating cycle	65 + 87 = 152 days Longer	147 days (given)
Cash conversion cycle	124 days (given) Longer	147 – 36 = 111

Therefore, both the operating and cash conversion cycles are longer for the company.
A is incorrect. See table.
C is incorrect. See table.
Financial Analysis Techniques
LOS b
Sections 4.2, 4.3
Working Capital Management
LOS b, c
Section 2.2

71 The following information is available for a firm:

Revenue	£800,000
Variable cost	400,000
Fixed cost	200,000

(continued)

Operating income	200,000
Interest	60,000
Net income	140,000

The firm's degree of total leverage (DTL) is *closest* to:

A 1.43.

B 2.00.

C 2.86.

C is correct. DTL = Revenue – Variable cost/Net income = £800,000 – £400,000/£140,000 = 2.86.

A is incorrect because it is the degree of financial leverage (DFL).
DFL = Operating income/Net income = £200,000/£140,000 = 1.43
B is incorrect because it is the degree of operating leverage (DOL).

$$\text{DOL} = (\text{Revenue} - \text{Variable cost})/\text{Operating Income} = [(£800{,}000 - £400{,}000)/£200{,}000] = 2.00$$

Measures of Leverage
LOS b
Section 3.5

72 Which is *most likely* considered a "pull" on liquidity?

A Increased difficulty in collecting receivables

B Obsolete inventory

C Reduction in a line of credit

C is correct. A "pull" on liquidity occurs when disbursements are made too quickly (e.g., current liabilities are paid instead of being held or when credit availability is reduced or limited). A "drag" on liquidity occurs when receipts lag (i.e., non-cash current assets do not convert to cash quickly). Consequently, a reduction in a credit line is a "pull" on liquidity.

B is incorrect because it is a "drag" on liquidity.
A is incorrect because it is a "drag" on liquidity. It is a result of increased assets.
Working Capital Management
LOS a
Section 2.1.3

73 Which of the following sources of short-term financing is *most likely* used by smaller companies?

A Commercial paper

B Collateralized loans

C Uncommitted lines

B is correct. Smaller companies use collateralized loans, factoring, or loans from non-bank companies as their sources of short-term financing. Larger companies can take advantage of commercial paper, banker's acceptances, uncommitted lines, and revolving credit agreements.

A is incorrect. Smaller companies use collateralized loans, factoring, or loans from non-bank companies as their sources of short-term financing. Larger companies can take advantage of commercial paper, banker's acceptances, uncommitted lines, and revolving credit agreements.

C is incorrect. Smaller companies use collateralized loans, factoring, or loans from non-bank companies as their sources of short-term financing. Larger companies can take advantage of commercial paper, banker's acceptances, uncommitted lines, and revolving credit agreements.

Working Capital Management
LOS g
Section 8.1-8.2

74 A financial adviser gathers the following information about a new client:

- The client is a successful economics professor at a major university.
- The client plans to work full time for seven years and then will work part time for three years before retiring.
- The client owns two homes and does not have any outstanding debt.
- The client has accumulated retirement savings of approximately $2 million through his employer's retirement plan and will have anticipated retirement spending needs of $60,000 per year.
- The client reads numerous financial publications and follows markets closely.
- Although concerned about the current health of the global economy, the client maintains that he is a long-term investor.

Based on the above information, which of the following *best* describes this client?

A High ability to take risk but a low willingness to take risk

B High ability to take risk and a high willingness to take risk

C Low ability to take risk but a high willingness to take risk

B is correct. The client is in a strong financial situation (stable job, no debt), has a reasonably long time horizon before needing any liquidity (10 years), and reasonable retirement spending needs relative to total assets. These factors indicate a high ability to take risk. In addition, the client's knowledge of financial markets, experience, and focus on the long term also indicate a high willingness to take risk.

A is incorrect because the client's investing knowledge, experience, and focus on long-term investing indicate a willingness to withstand investment risk.

C is incorrect because the client has a high ability to withstand investment risk for the reasons identified above.

Basics of Portfolio Planning and Construction
LOS d, e
Section 2.2.1

75 An analyst observes that the historic geometric nominal return for equities is 9%. Given a real return of 1% for riskless Treasury bills and annual inflation of 2%, the real rate of return and risk premium for equities are *closest* to:

A 7.9% and 5.8%.

B 6.9% and 7.9%.

C 6.9% and 5.8%.

C is correct.
[(1 + 0.09)/(1 + 0.02)] – 1 = 6.9%, and [(1 + 0.69)/(1 + 0.01)] – 1 = 5.8%
A is incorrect.
[(1 + 0.09)/(1 + 0.01)] – 1 = 7.9%, and [(1 + 0.079)/(1 + 0.02)] – 1 = 5.8%
B is incorrect.
[(1 + 0.09)/(1 + 0.02)] – 1 = 6.9%, and [(1 + 0.09)/(1 + 0.01)] – 1 = 7.9%
Portfolio Risk and Return: Part I
LOS a
Section 2.2.3

76 The following table presents historical information for two stocks, RTF and KIU:

Variance of returns for RTF	0.0625
Variance of returns for KIU	0.0900
Correlation coefficient between RTF and KIU	0.4500

The covariance between RTF and KIU is *closest* to:

A 0.0025.

B 0.0675.

C 0.0338.

C is correct.
$Cov_{i,j} = \rho_{i,j}\sigma_i\sigma_j = 0.0625^{1/2} \times 0.090^{1/2} \times 0.450 = 0.0338$
A is incorrect because $Cov_{i,j} = \rho_{i,j}\sigma_i\sigma_j = 0.0625 \times 0.090 \times 0.450 = 0.0025$ (the variances are used instead of the standard deviations).
B is incorrect because $Cov_{i,j} = \rho_{i,j}\sigma_i\sigma_j = 2 \times 0.0625^{1/2} \times 0.090^{1/2} \times 0.450 = 0.0675$ (the covariance is multiplied by 2).
Portfolio Risk and Return: Part I
LOS c
Section 2.3

77 A stock has a correlation of 0.45 with the market and a standard deviation of returns of 12.35%. If the market has a standard deviation of returns of 8.25%, then the beta of the stock is *closest* to:

A 0.30.

B 0.67.

C 1.50.

B is correct.

$$\beta = \frac{\rho_{i,m}\sigma_i\sigma_m}{\sigma_m^2} = \frac{0.45 \times 0.1235 \times 0.0825}{0.0825^2} = 0.67$$

A is incorrect.

$$\frac{0.45 \times 0.0825^2}{0.1235 \times 0.0825} = 0.30$$

C is incorrect.

$$\frac{0.1235}{0.0825} = 1.4969$$

Portfolio Risk and Return: Part II
LOS e
Section 3.2.4

78 A portfolio manager generated a rate of return of 15.5% on a portfolio with beta of 1.2. If the risk-free rate of return is 2.5% and the market return is 11.8%, Jensen's alpha for the portfolio is *closest* to:

A 1.84%.

B 4.34%.

C 3.70%.

A is correct.

$$\begin{aligned}\text{Jensen's alpha} &= R_p - [R_f + \beta_p(R_m - R_f)] \\ &= 0.155 - [0.025 + 1.2 \times (0.118 - 0.025)] \\ &= 0.0184\end{aligned}$$

B is incorrect. Alpha is calculated as $0.155 - [1.2 \times (0.118 - 0.025)] = 0.0434$.
C is incorrect. Alpha is calculated as $0.155 - [0.025 + (0.118 - 0.025)] = 0.037$.
Portfolio Risk and Return: Part II
LOS h
Section 4.3.2

79 A portfolio engages in an investment strategy that relies on a particular element of the tax code to produce superior after-tax returns for high-net-worth individuals. Because of this strategy, the portfolio *most likely* faces a high level of:

A compliance risk.

B model risk.

C legal risk.

A is correct. Tax risk, the risk that the tax code could change, along with regulatory and accounting risks together form compliance risk. Legal risk is the risk of being sued or the risk that a court will not uphold an agreement. Model risk is the risk of using the wrong model for analysis or the risk of using the right model incorrectly.

B is incorrect because model risk is the risk of using the wrong model for analysis or the risk of using the right model incorrectly.

C is incorrect because legal risk is the risk of being sued or the risk that a court will not uphold an agreement.

Risk Management: An Introduction
Section 4.2
LOS f

80 A risk metric that measures how different an actual investment outcome could be from what the investor expects is *most likely* a:

A vega.

B duration.

C standard deviation.

C is correct. Standard deviation is a measure of dispersion in a probability distribution and is used to describe the range of outcomes (minimum and maximum, centered on the expected outcome) that can occur with a particular probability. In contrast, duration measures the sensitivity of a security or portfolio to a change in market interest rates, and vega measures the sensitivity of a security (either a derivative or a security with derivative-like characteristics) to a change in the price volatility of the underlying asset.

A is incorrect because vega measures the sensitivity of a security (either a derivative or a security with derivative-like characteristics) to a change in the price volatility of the underlying asset.

B is incorrect because duration measures the sensitivity of a security or portfolio to a change in market interest rates.

Risk Management: An Introduction,
Section 5.2
LOS g

81 Which date in the chronology of a dividend payment is *most likely* determined by a security exchange?

A Holder-of-record date

B Declaration date

C Ex-dividend date

C is correct. The ex-dividend date is normally determined by the security exchange on which the shares are listed. The corporation determines the holder-of-record date and declaration date.

A is incorrect because the holder-of-record date is determined by the company.

B is incorrect because the declaration date is determined by the company.

Equity Valuation: Concepts and Basic Tools
LOS d
Sections 4.1

82 A company's non-callable, non-convertible preferred stock that pays an annual dividend of $3.75 is currently selling at its par value of $50 per share. If the required rate of return increases by 75 bps, the preferred stock's new price is *closest* to:

A $45.45.

B $49.50.

C $55.56.

A is correct.
Investors' current required return = $3.75/$50 = 7.50%
New required return = 7.50% + 0.75% = 8.25%
New market price = $3.75/0.0825 = $45.45
B is incorrect. Mistake in computing new return.
Investors' current required return = $3.75/$50 = 7.50%
New required return = 7.50% + 0.075 = 7.575%
New market price = $3.75/0.07575 = $49.50
C is incorrect. It mistakenly subtracts the increase in the required return.
New required return = 7.50% – 0.75% = 6.75%
New market price = $3.75/0.0675 = $55.56
Equity Valuation: Concepts and Basic Tools
LOS f
Section 4.1

83 The following information is available about a company:

Next year's sales revenue	$180 million
Next year's net profit margin	15%
Dividend payout ratio	60%
Dividend growth rate expected during Years 2 and 3	25%
Dividend growth rate expected after Year 3	5%
Investors' required rate of return	12%
Number of outstanding shares	8.1 million

The current value per share of the company's common stock according to the two-stage dividend discount model is *closest* to:

A $39.36.

B $49.20.

C $52.86.

A is correct.
Net profit margin = Net earnings/Sales
Net earnings = Net profit margin × Sales
Dividends per share (D_n) = (Net earnings × Payout ratio)/Number of outstanding shares

Therefore,

$D_1 = (\$180 \text{ million} \times 0.15 \times 0.60)/8.1 \text{ million} = \$2.00$
$D_2 = \$2.00(1 + 0.25) = \$2.50$
$D_3 = \$2.00(1 + 0.25)^2 = \$3.13$
$D_4 = \$2.00(1 + 0.25)^2(1 + 0.05) = \$3.28$

$$V_3 = \frac{\$3.28}{(0.12 - 0.05)} = \$46.86$$

$$V_0 = \frac{\$2.00}{(1 + 0.12)} + \frac{\$2.50}{(1 + 0.12)^2} + \frac{\$3.13}{(1 + 0.12)^3} + \frac{\$46.86}{(1 + 0.12)^3} = \$39.36$$

B is incorrect. It has timing mistakes and starts supernormal growth in Year 1 itself.

$$V = \frac{2(1.25)}{1.12} + \frac{2(1.25)^2}{1.12^2} + \frac{2(1.25)^3}{1.12^3} + \frac{\frac{2(1.25)^3(1.05)}{(0.12 - 0.05)}}{1.12^3}$$

$$= \$2.23 + \$2.49 + \$2.78 + \$41.70 = \$49.20$$

C is incorrect. It does not discount the terminal value of $46.86 in year 3.

$$V_3 = \frac{\$3.28}{(0.12 - 0.05)} = \$46.86$$

$$V_0 = \frac{\$2.00}{(1 + 0.12)} + \frac{\$2.50}{(1 + 0.12)^2} + \frac{\$3.13}{(1 + 0.12)^3} + \$46.86 = \$52.86$$

Equity Valuation: Concepts and Basic Tools
LOS g
Section 4.3

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84 After a two-for-one stock split, which of the following will *most likely* change relative to its pre-split value?

A Earnings per share (EPS)

B Price-to-earnings ratio (P/E)

C Dividend payout ratio

A is correct. A two-for-one stock split will double the number of shares, thus reducing the EPS to half of its pre-split value. P/E will remain unchanged because the price also reduces by half and exactly cancels out the effect of the reduced EPS. The dividend payout ratio remains unchanged because the same proportion of earnings will still be used after the split.

C is incorrect because the dividend payout ratio is unchanged.

B is incorrect because the P/E ratio is unchanged.

Equity Valuation: Concepts and Basic Tools
LOS c
Section 2.5
Understanding Income Statements
LOS h
Section 6.2

85 Which of the following statements is *most* accurate about recessions?

A If severe, the demand for products of defensive companies will eventually be adversely affected.

B Consumers are more likely to defer purchases of products of defensive companies than of cyclical companies.

C Non-cyclical companies tend to underperform cyclical companies.

A is correct. The impact of severe recessions usually reaches all parts of the economy and affects cyclical and defensive companies.

B is incorrect. Consumers do not tend to defer purchases from defensive companies during a recession.

C is incorrect. Cyclical companies underperform non-cyclical companies during economic recessions.

Introduction to Industry and Company Analysis
LOS c
Section 3.2

86 A change in which of the following *best* describes a macroeconomic influence on industry growth?

A The cost of debt

B Personal spending habits

C Population size

A is correct. External factors affecting an industry's growth include macroeconomic, technological, demographic, governmental, and social influences. A change in interest rates, or the cost of debt, is an example of a macroeconomic influence on industry growth, profitability, and risk.

C is incorrect. Changes in population size is an example of a demographic influence on industry growth, profitability, and risk.

B is incorrect. Changes in personal spending habits is an example of a social influence on industry growth, profitability, and risk.

Introduction to Industry and Company Analysis
LOS j
Section 5.2

87 A corporate manager pursuing a low-cost strategy will *most likely*:

A engage in offering products of unique quality or type.

B have strong market research teams for product development and marketing.

C invest in productivity-improving capital equipment.

C is correct. A corporate manager pursuing a cost leadership strategy must be able to invest in productivity-improving capital equipment for achieving cost controls and being able to offer products and services at lower prices than the competition.

A is incorrect. Offering products that are unique either in quality, type, or means of distribution is suitable for differentiation strategies.

B is incorrect. Having strong market research teams for product development and marketing is suitable for differentiation strategies.

Introduction to Industry and Company Analysis
LOS k
Section 6

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88 In a highly efficient market, unexpected positive news on a stock is announced to the public. After this announcement, the difference between the market value and the intrinsic value of the stock will *most likely*:

A remain zero.

B decrease.

C increase.

A is correct. In a highly efficient market, (1) market value reflects new information quickly and rationally, and (2) an asset's market value equals its intrinsic value. Therefore, after the announcement, the difference between a stock's market value and its intrinsic value will remain equal to zero because both market and intrinsic values adjust to reflect the unexpected news by the same amount and at the same time.

B is incorrect. In a highly efficient market, (1) market value reflects new information quickly and rationally, and (2) an asset's market value equals its intrinsic value. In an inefficient market, (1) the market value of a stock adjusts slowly to an unexpected news, and (2) there are probably discrepancies between market value and intrinsic value. Therefore, only in an inefficient market could the difference between market and intrinsic values decrease after the announcement of an unexpected positive news.

C is incorrect. In a highly efficient market, (1) market value reflects new information quickly and rationally, and (2) an asset's market value equals its intrinsic value. In an inefficient market, (1) the market value of a stock adjusts slowly to an unexpected news, and (2) there are probably discrepancies between market value and intrinsic value. Therefore, only in an inefficient market could the difference between market and intrinsic values increase after the announcement of an unexpected positive news.

Market Efficiency
LOS b, a
Sections 2.1, 2.2, 2.3

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89 An internal evaluation of the trading behavior of three fund managers of a mutual fund company during the past year has revealed the following:

Manager X	Was slower than peers when reacting to changes in information
Manager Y	Rarely realized investment losses but realized most of the investment gains
Manager Z	Tended to overreact by disliking losses more than liking comparable gains

Which of the three managers *most likely* displayed the disposition effect bias?

A Manager Y

B Manager X

C Manager Z

90 A company that pursues differentiation as its competitive strategy is *most likely* to emphasize:

A strong market research.

B efficient operating and reporting systems.

C defensive market positions.

A is correct. A company that follows a product or service differentiation strategy needs to emphasize market research to identify and match customer needs with product development and marketing for which customers are willing to pay a premium.

Introduction to Industry and Company Analysis
LOS k
Section 6

91 A trader buys 500 shares of a stock on margin at $36 a share using an initial leverage ratio of 1.66. The maintenance margin requirement for the position is 30%. The stock price at which the margin call will occur is *closest* to:

A $25.20.

B $30.86.

C $20.57.

C is correct. Initial equity (%) in the margin transaction = 1/Leverage ratio = 1/1.66 = 0.60.

Initial equity per share at the time of purchase = $36 × 0.60 = $21.60
Price (*P*) at which margin call occurs:
Equity per share/Price per share = Maintenance margin (%)

$$(\$21.60 + P - \$36)/P = 0.30$$
$$0.7P = \$14.40$$
$$P = \$20.57$$

A is incorrect. It simply takes (1 – maintenance margin %) of the initial price as the critical price for margin call: $36 × (1 – 0.3) = $25.20.

B is incorrect. The mistake is in taking 0.40 as the initial equity.
Initial equity per share at the time of purchase = $36 × 0.40 = $14.40
Price at which margin call occurs:
Equity per share/Price per share = Maintenance margin %

$$(\$14.40 + P - \$36)/P = 0.30$$
$$0.7P = \$21.60$$
$$P = \$30.86$$

Market Organization and Structure
LOS f
Section 5.2

92 The MSCI All Country World Index is *best* described as a:

A broad market equity index.

B multi-market equity index.

C global sector equity index.

B is correct. The MSCI All Country World Index is a multi-market equity index because it represents stocks of 23 developed and 22 emerging markets.

A is incorrect. The MSCI All Country World Index represents stocks of 23 developed and 22 emerging markets, not a selected market.

C is incorrect. The MSCI All Country World Index is composed of global stocks, but it doesn't represent specific economic sectors.

Security Market Indexes
LOS h
Sections 5.2, 5.3, 7.3

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93 Which of the following statements regarding rebalancing and reconstitution of an index is *most* accurate?

A Market-capitalization-weighted indexes require frequent rebalancing.

B Reconstitution can dramatically affect prices of both current and prospective constituents.

C Reconstitution is part of index management that reduces the need for rebalancing.

B is correct. Reconstitution is the process in which index providers review whether securities are retained, removed, or added. Prior to the index's reconstitution date, portfolio managers buy stocks they think will be added to an index and sell stocks they think will be deleted from the index, thus dramatically altering the prices of the affected stocks.

A is incorrect because market-capitalization-weighted indexes largely rebalance themselves. An equal-weighted index is one that needs frequent rebalancing.

C is incorrect because reconstitution and rebalancing are both part of index management and create turnover of an index. Besides, reconstitution is a part of the rebalancing cycle.

Security Market Indexes
LOS f
Section 3.3

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94 Which of the following is *most likely* an indicator of liquidity in the secondary market for bonds?

A Bid-to-cover ratio

B Bid–offer spread

C Settlement period

B is correct. The bid–offer spread reflects the prices at which secondary market dealers will buy from a customer (bid) and sell to a customer (offer). It is an indicator of liquidity because a tighter bid–offer spread represents a more liquid market than a market with a wider bid–offer spread.

A is incorrect because the bid-to-cover ratio represents the activity in a primary bond market auction.

C is incorrect because the settlement period represents the market's conventions for settlement for different types of bonds (e.g., government bonds or corporate bonds.)

Fixed-Income Markets: Issuance, Trading, and Funding

LOS d
Section 3.2

95 ANZ Corporation has issued a three-year bond that makes semiannual interest payments in March and September at the coupon rate of six-month Libor + 250 bps. This bond is *most likely* referred to as a:

A floating-rate note.

B plain vanilla bond.

C pure discount bond.

A is correct. A floating-rate note pays a floating interest rate equal to a reference rate plus a spread.

B is incorrect because a plain vanilla bond pays a fixed rate of interest (i.e, the coupon payment does not change during the bond's life).

C is incorrect because a pure discount bond does not pay any coupon interest during the life of the bond.

Fixed-Income Securities: Defining Elements
LOS a
Section 2.1.4

96 For two equally rated speculative grade bonds, what factor is *least likely* to account for differences in their valuation?

A Severity of loss

B Probability of default

C Perceived creditworthiness of the companies

B is correct. In the case of speculative grade bonds, two bonds with the same credit ratings will tend to have the same probabilities of default. They may still trade at very different valuations because for such bonds the market typically begins focusing on the severity of loss in the event of default, which can be quite different for similarly rated bonds.

A is incorrect because for speculative grade bonds with similar credit ratings the valuations may be quite different if the severity of loss associated with the two bonds is very different from each other.

C is incorrect because if there is a perceived difference in credit quality there is a difference in valuation.

Fundamentals of Credit Analysis
LOS d
Section 4.3

97 A credit analyst observes the following information for Alpha Co. at fiscal years ending 20X1 and 20X2.

Excerpt from the Consolidated Income Statement of Alpha Co. for the Fiscal Years Ending 31 December 20X1 and 20X2 (in millions)

	20X1	20X2
Gross profit	$550.0	$505.0
Operating expenses	450.0	370.0
Operating profit	100.0	135.0
Interest expense	30.0	35.0
Income before taxes	70.0	100.0
Income taxes (at 30%)	21.0	30.0
Net income	49.0	70.0
Additional information		
Depreciation and amortization	25.0	35.0

Based on this information, over this period Alpha's interest coverage ratio has:

A improved.

B remained unchanged.

C deteriorated.

A is correct. The company's interest coverage ratio can be computed as EBITDA/Interest expense. That is:

	20X1	20X2
EBITDA	125.0	170.0
Interest expense	30.0	38.0
EBITDA/Interest expense	4.17	4.47

EBITDA = Operating profit + Depreciation and amortization

The company's EBITDA interest coverage ratio has improved over this period. If EBIT is used to calculate the coverage ratios, the same conclusion is reached: for 20X1 the ratio is 3.33, and for 20X2 it is 3.86.

B is incorrect because the EBITDA interest coverage ratio has improved over this period.

C is incorrect because the EBITDA interest coverage ratio has improved over this period.

Fundamentals of Credit Analysis
LOS f
Section 5.2.1

98 Credit spreads are *most likely* to narrow during:

A economic contractions.

B a period of flight to quality.

C economic expansions.

C is correct. Credit spreads narrow during economic expansions and widen during economic contractions. During an economic expansion, corporate revenues and cash flows rise, making it easier for corporations to service their debt, and investors purchase corporates instead of Treasuries, causing spreads to narrow.

A is incorrect. Credit spreads narrow during economic expansions and widen during economic contractions.

B is incorrect. During a flight to quality investors sell corporate and buy treasuries thereby widening the credit spread on corporates.

Fundamentals of Credit Analysis
LOS h
Section 6

99 Which of the following is *least likely* a form of internal credit enhancement used in a securitization?

A Subordination

B Overcollateralization

C Letter of credit

C is correct. The use of letters of credit is a type of external credit enhancement used in a securitization.

A is incorrect because subordination is a type of internal credit enhancement used in a securitization.

B is incorrect because overcollateralization is a type of internal credit enhancement used in a securitization.

Introduction to Asset-Backed Securities
LOS b
Section 3.2

100 Residential mortgage-backed securities issued in the US by government-sponsored enterprises are guaranteed by:

A the full faith and credit of the government.

B the government-sponsored enterprise.

C external credit enhancements.

B is correct. For residential mortgage-backed securities (RMBS) issued by a GSE (government-sponsored enterprise), such as Fannie Mae and Freddie Mac, credit risk is reduced by the guarantee of the GSE itself.

A is incorrect because RMBS issued by a federally related institution, such as Ginnie Mae, are guaranteed by the full faith and credit of the government with respect to timely payment of principal and interest.

C is incorrect because RMBS issued by private entities are not guaranteed by a federal agency or GSE and use credit enhancements to reduce risk.

Introduction to Asset-Backed Securities

LOS d
Section 5

101 Consider a five-year option-free bond that is priced at a discount to par value. Assuming the discount rate does not change, one year from now the value of the bond will *most likely*:

A stay the same.

B decrease.

C increase.

C is correct. The bond is priced below its par value but will be worth exactly par value at maturity. Over time, assuming a stable discount rate, the value of the bond must rise so that it is equal to par at maturity. That is, the price is "pulled to par."

A is incorrect because the bond's value must rise over time to be equal to its par value.

B is incorrect because the bond's value must rise over time to be equal to its par value.

Introduction to Fixed-Income Valuation
LOS b
Section 2.3

102 Which of the following 90-day money market instruments *most likely* offers the investor the highest rate of return?

Money Market Instrument	Quoted Rate	Quotation Basis	Day Convention
Instrument A	5.78%	360	Discount rate
Instrument B	5.80%	365	Discount rate
Instrument C	5.96%	365	Add-on rate

A Instrument A

B Instrument C

C Instrument B

B is correct. Instrument C provides a bond equivalent yield of 5.96%, compared with 5.946% for Instrument A and 5.883% for Instrument B.

A is incorrect. To calculate the bond equivalent yield: $FV = 100$, Days = 90, Year = 360, $DR = 0.0578$.

$PV = 100 \times [1 - (90/360) \times 0.0578] = 98.555$

$AOR = (365/90) \times [(100 - 98.555)/98.555] = 5.946\%$

C is incorrect. To calculate the bond equivalent yield: $FV = 100$, Days = 90, Year = 365, $DR = 0.058$.

$PV = 100 \times [1 - (90/365) \times 0.058] = 98.570$

$AOR = (365/90) \times [(100 - 98.570)/98.5705] = 5.883\%$

Introduction to Fixed-Income Valuation
LOS f
Section 3.5

103 Assume the following annual forward rates were calculated from the yield curve.

Time Period	Forward Rate
0y1y	0.50%
1y1y	0.70%
2y1y	1.00%
3y1y	1.50%
4y1y	2.20%

The four-year spot rate is *closest* to:

A 0.924%.

B 1.348%.

C 1.178%.

A is correct. The four-year spot rate can be computed as:

$$z_4 = \left[(1.005) \times (1.007) \times (1.01) \times (1.015)\right]^{1/4} - 1 = 0.924\%$$

C is incorrect because it is computed as:

$$\left[(1.005) \times (1.007) \times (1.01) \times (1.015) \times (1.022)\right]^{1/5} - 1 = 1.178\%$$

B is incorrect because it is computed as:

$$\left[(1.007) \times (1.01) \times (1.015) \times (1.022)\right]^{1/4} - 1 = 1.348\%$$

Introduction to Fixed-Income Valuation
LOS h
Section 4

104 A bond is selling for 98.2. It is estimated that the price will fall to 96.6 if yields rise 30 bps and that the price will rise to 100.1 if yields fall 30 bps. Based on these estimates, the effective duration of the bond is *closest to*:

A 1.78.

B 5.94.

C 11.88.

B is correct. The effective duration of a bond is

$$\text{EffDur} = \frac{(PV_-) - (PV_+)}{2 \times (\Delta\text{Curve}) \times (PV_0)}$$

where PV_-, PV_0, and PV_+ are the values of the bond when the yield falls, under the current yield, and when the yield rises, respectively, and ΔCurve is the change in the benchmark yield curve.

$$\text{EffDur} = \frac{100.1 - 96.6}{2 \times 98.2 \times 0.003} = 5.94$$

A is incorrect because it uses a change of 1% (0.01) instead of 30 bps (0.003), as follows:

$$\frac{100.1 - 96.6}{2 \times 98.2 \times 0.01} = 1.78$$

C is incorrect because it does not include the 2 in the denominator, as follows:

$$\frac{100.1 - 96.6}{98.2 \times 0.003} = 11.88$$

Understanding Fixed-Income Risk and Return
LOS b
Section 3.2

105 A portfolio consists of four bonds with the following characteristics:

Bond	Market Value	Duration
A	$1.2 million	3.2
B	$3.4 million	7.6
C	$2.9 million	12.4
D	$1.6 million	1.5

The duration of the portfolio is *closest to*:

A 7.48.

B 5.40.

C 6.18.

A is correct. The duration of a portfolio is the weighted average of the bonds' durations in which the weight for each bond is its contribution to the portfolio's value, or w_{bond} = $Value_{bond}/Value_{portfolio}$ and $Duration_{portfolio} = \Sigma w_{bond} \times Duration_{bond}$. In this case, value of the portfolio is 1.2 + 3.4 + 2.9 + 1.6 = 9.1 million, and the portfolio duration equals (1.2/9.1 × 3.2) + (3.4/9.1 × 7.6) + (2.9/9.1 × 12.4) + (1.6/9.1 × 1.5) = 0.4220 + 2.8396 + 3.9516 + 0.2637 = 7.48.

B is incorrect because it is the median of the bonds' durations.

C is incorrect because it is the arithmetic mean (average) of the bonds' durations.

Understanding Fixed-Income Risk and Return
LOS f
Section 3.4

106 The factor *least likely* to influence the yield spread on an option-free, fixed-rate bond is a change in the:

A credit risk of the issuer.

B expected inflation rate.

C liquidity of the bond.

B is correct. For an option-free, fixed-rate bond, changes in the yield spread can arise from changes in the credit risk of the issuer and/or changes in the liquidity of the issue. Changes in the expected inflation rate influence the benchmark rate.

C is incorrect because changes in the yield spread an option-free, fixed-rate bond arise from changes in the liquidity of the issue.

A is incorrect because changes in the yield spread an option-free, fixed-rate bond arise from changes in the credit risk of the issuer.

Understanding Fixed-Income Risk and Return
LOS l

Section 5

107 The price of a forward contract *most likely*:

A decreases as the price of the underlying goes up.

B is constant and set as part of the contract specifications.

C increases as market risk increases.

B is correct. The price of a forward contract remains constant throughout the life of the contract. It is set as part of the contract specifications.

A is incorrect. The price of a forward contract is not affected by market conditions. It is set as part of the contract specifications.

C is incorrect. The price of a forward contract is not affected by market conditions. It is set as part of the contract specifications.

Basics of Derivative Pricing and Valuation
LOS b
Section 2.4

108 Which of the following statements *best* describes changes in the value of a long forward position during its life?

A As the time to maturity goes down, the value of the position goes up.

B As the price of the underlying goes up, the value of the position goes up.

C As interest rates go down, the value of the position goes up.

B is correct. Given the formula for the value of a forward contract:
$V_t(T) = S_t - F_0(T)(1 + r)^{-(T-t)}$it follows that the value of the contract goes up as the price of the underlying goes up.

A is incorrect. As the time to maturity goes down, the value of the contract goes down.

C is incorrect. As interest rates go down, the value of the contract goes down.

Basics of Derivative Pricing and Valuation
LOS c
Section 3.1.3

109 Conceptually, a forward rate agreement *most likely* allows a company that wants to invest money in the future to lock in a rate by making a:

A variable payment and receiving a fixed payment.

B fixed payment and receiving a different fixed payment.

C fixed payment and receiving a variable payment.

A is correct. Forward rate agreements are forward contracts that conceptually allow lenders to lock in a fixed payment on a future investment by receiving a known payment and making an unknown payment that offsets the unknown future interest payment.

B is incorrect. This does not offset the unknown interest payment in the future and thus does not lock in a rate.

C is incorrect. Making a fixed payment and receiving a variable payment looks in a borrowing rate in a forward rate agreement.

Basics of Derivative Pricing and Valuation
LOS e
Section 3.1.4

110 In the binomial model, the difference between the up and down factors *best* represents the:

A volatility of the underlying.

B moneyness of an option.

C pseudo probability.

A is correct. The volatility of the underlying is captured in the binomial model by the difference between the up and down factors.

B is incorrect. The moneyness of an option is given by the difference between price of the underlying and exercise price.

C is incorrect. The difference between the up and down factors is only one part (the denominator) of the formula for the pseudo probabilities.

Basics of Derivative Pricing and Valuation
LOS n
Section 4.2

111 A derivative can *best* be described as a financial instrument that:

A duplicates the underlying asset's performance.

B transforms the underlying asset's performance.

C passes through the underlying asset's returns.

B is correct. The best characterization of a derivative is that it typically transforms the underlying asset's performance.

A is incorrect. A derivative transforms the performance of the underlying asset rather than duplicating the performance of the underlying asset.

C is incorrect. A derivative transforms the performance of the underlying asset rather than passing through the returns of the underlying asset.

Derivative Markets and Instruments
LOS a
Section 2

112 Which of the following is *most likely* to be a feature common to both forward and futures contracts?

A Daily marking to market of contracts

B Standardization of the contract's terms and conditions

C Their use for hedging or speculation

C is correct. Both forward and futures contracts can be used for hedging an exposure or speculating on the particular price direction of the underlying security.

A is incorrect. Daily marking to market is a feature associated only with futures contracts.

B is incorrect. Standardized contract terms and conditions are associated only with futures contracts.

Derivative Markets and Instruments
LOS c
Section 4.1.2

113 If the implied volatility for options on a broad-based equity market index goes up, then it is *most likely* that:

A the broad-based equity market index has gone up in value.

B the general level of market uncertainty has gone up.

C market interest rates have gone up.

B is correct. One benefit of derivatives markets is information discovery. Implied volatility reveals information about the risk of the underlying. Increases in implied volatility are an implication of increased market uncertainty.

A is incorrect. Implied volatility does not provide information about the level of the equity market.

C is incorrect. Implied volatility does not provide information about the level of market interest rates.

Derivative Markets and Instruments
LOS d
Section 5.2

114 Compared to traditional investments, alternative investments *least likely* demonstrate which of the following characteristics?

A Narrow manager specialization

B Underlying investments that are illiquid

C A high degree of regulation

C is correct. Alternative investments are less regulated and transparent than traditional investments such as equity and debt securities.

A is incorrect because narrow manager specialization is a characteristic of alternative investments.

B is incorrect because a characteristic of alternative investments is that the underlying investments are illiquid.

Introduction to Alternative Investments
LOS a
Section 2

115 Capital provided for companies moving toward operation but before commercial manufacturing and sales have occurred *best* describes which stage in venture capital investing?

A Later stage

B Seed stage

C Early stage

C is correct. Early-stage financing is capital provided for companies moving toward operation but before commercial manufacturing and sales have occurred.

A is incorrect. Later-stage financing is provided after commercial manufacturing and sales have begun but before any initial public offering.

B is incorrect. Seed-stage financing is capital provided for a business idea.

Introduction to Alternative Investments
LOS b
Section 4.2.2

116 The *most likely* impact of adding commodities to a portfolio of equities and bonds is to:

A increase risk.

B provide higher current income.

C reduce exposure to inflation.

C is correct. Over the long term, commodity prices are closely related to inflation, so including commodities in a portfolio of equities and bonds will reduce its exposure to inflation.

A is incorrect because commodities have low correlations with traditional securities and therefore reduce overall risk.

B is incorrect because commodity investments tend to produce no current income.

Introduction to Alternative Investments
LOS c
Section 6.3

117 With regard to venture capital, which of the following statements is *most likely* true regarding venture capital?

A Investments typically are in later stage and more established companies.

B Investors tend to have short time horizons.

C Investors require a higher return than investors in publicly traded equity.

C is correct. The historical standard deviations of annual return for venture capital are higher than that of common stocks. Investors should therefore require a higher return in exchange for accepting this higher risk, along with the illiquidity of venture capital investing.

A is incorrect because the venture capital strategy typically invests in start-up or early stage companies, not later stage companies.

B is incorrect because venture capital investments require long time horizons.
Introduction to Alternative Investments
LOS d
Section 4.3

118 Commodity futures prices are *most likely* in backwardation when:

A interest rates are high.

B storage costs are high.

C the convenience yield is high.

C is correct. In backwardation, futures prices are lower than spot prices, that is, the commodity forward curve is downward sloping. This scenario occurs when the convenience yield is high. Futures price ≈ Spot price (1 + *r*) + Storage costs – Convenience yield.

A is incorrect. Futures price ≈ Spot price (1 + r) + Storage costs – Convenience yield. Thus, high interest rates contribute to an upward sloping commodity forward curve.

B is incorrect. Futures price ≈ Spot price (1 + r) + Storage costs – Convenience yield. Thus, high storage costs contribute to an upward sloping commodity forward curve.

Introduction to Alternative Investments
LOS e
Section 6.4.1

Initial investment capital	$100 million
Return at the end of one year	12%
Management fee based on assets under management	1%
Incentive fee based on the return net of the management fee	10%

119 Assume management fees are calculated using end-of-period valuation. The investor's net return given this fee structure is *closest* to:

A 10.88%.

B 9.79%.

C 9.68%.

B is correct.

Management fee: 1% of $112 million = $1.12 million
Incentive fee: 10% of ($12 million – $ 1.12 million) = $1.088 million
Fund value after fees: $112 million – $1.12 million – $1.088 million = $109.792 million
Investor return: ($109.792 million/$100 million) – 1 = 9.79%

C is incorrect. It ignores the fact that the incentive fee is calculated net of management fees. Management fee: 1% of $112 million = $1.12 million.
Incentive fee: 10% of $12 million = $1.2 million.
Fund value after fees: $112 million – $1.12 million – $1.2 million = $109.68 million
Investor return: ($109.68 million / $100 million) - 1 = 9.68%

B is incorrect. It neglects the incentive fee.
Management fee: 1% of $112 million = $1.12 million
Fund value after fees: $112 million – $1.12 million = $110.88 million
Investor return: ($110.88 million/$100 million) – 1 = 10.88%
Introduction to Alternative Investments

LOS f
Section 3.3

120 Alternative investments that rely on estimates rather than observable market prices for valuation purposes are *most likely* to report:

A returns that are understated.

B volatility of returns that is understated.

C correlations of returns with the returns of traditional assets that are overstated.

B is correct. The use of estimates tends to smooth the return series. As a consequence, the volatility of returns will be understated.

A is incorrect. There is a tendency for returns to be overestimated or at least smoothed.

C is incorrect. Correlations of returns with the returns of traditional assets tend to be understated as a consequence of smoothing the return series.

Introduction to Alternative Investments
LOS g
Section 8.2