2018 Level I Mock Exam AM

The morning session of the 2018 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	Ethical and Professional Standards	27
19–33	Quant	22.5
34–45	Econ	18
46–69	Financial Reporting and Analysis	36
70–78	Corporate Finance	13.5
79–86	Portfolio Management	12
87–98	Equity	18
99–110	Fixed Income	18
111–115	Derivatives	7.5
116–120	Alternative Investments	7.5
	Total:	**180**

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2018 LEVEL I MOCK EXAM AM

1 Andrew Smith, CFA, works for Granite, a commercial bank that also has a sizeable sell side research division. Smith is presenting financing solutions to a potential business client, Dynamic Materials Corp. As part of his presentation, Smith mentions that Granite will initiate research coverage on Dynamic. Is Smith's arrangement *most likely* appropriate with regards to the CFA Standards?

A Yes.

B No, because Smith cannot offer to provide research coverage on a company if they become a corporate finance client.

C No, because Granite cannot provide research coverage on a corporate finance client as this constitutes a violation of research independence.

A is correct because under Standard I(B) members and candidates must protect their independence and objectivity. Agreeing to provide objective research coverage of a company does not constitute a violation of this standard provided the analyst writing the report is free to come up with their own independent conclusion. Smith can agree to provide research coverage but cannot commit Granite's research department to providing a favorable recommendation.

B is incorrect because providing research coverage in this situation does not constitute a violation of the Code and Standards as long as the independence of this research is not compromised.

C is incorrect because providing research coverage in this situation does not constitute a violation of the Code and Standards as long as the independence of this research is not compromised.

Guidance for Standards I–VII
LOS b
Standard I(B)–Independence and Objectivity

2 During an on-site company visit, Marsha Ward, CFA, accidentally overheard the Chief Executive Officer (CEO) of Stargazer, Inc., discussing the company's tender offer to purchase Dynamica Enterprises, a retailer of Stargazer products. According to the CFA Institute Standards of Professional Conduct, Ward *most likely* **cannot** use the information because:

A it relates to a tender offer.

B it was overheard and might be considered unreliable.

C she does not have a reasonable and adequate basis for taking investment action.

A is correct because trading on the information is restricted as it relates to a tender offer; it is clearly material, nonpublic information [Standard II(A)].

B is incorrect because the information could be considered to come from a reliable source because if comes from senior management, is nonpublic, and should not be used since it concerns a tender offer.

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C is incorrect because the information is material and is nonpublic so that it should not be used as the basis for taking investment action. There is simply not enough information provided to determine if there is a reasonable and adequate basis for investment action.

Guidance for Standards I–VII
LOS a
Standard II(A)–Material Nonpublic Information

3 Which of the following is not included in the nine major provisions of the Global Investment Performance Standards (GIPS)?

A Input Data, Calculation Methodology, and Real Estate

B Fundamentals of Compliance, Composite Construction, and Disclosure

C Calculation Methodology, Composite Construction, and Alternative Assets

C is correct because Alternative Assets is not among the nine major provisions or sections of the Global Investment Performance Standards, which include: Fundamentals of Compliance, Input Data, Calculation Methodology, Composite Construction, Disclosure, Presentation and Reporting, Real Estate, Private Equity, and Wrap Fee/Separately Managed Account (SMA) Portfolios.

A is incorrect because these are included in the nine major provisions of the GIPS.

B is incorrect because these are included in the nine major provisions of the GIPS.

Global Investment Performance Standards (GIPS)
LOS d

4 Which of the following *least likely* reflects the two primary principles of the CFA Institute Rules of Procedure for Proceedings Related to Professional Conduct?

A Confidentiality of proceedings

B Public disclosure of disciplinary sanctions

C Fair process to the member and candidate

B is correct because the two principles of the Rules of Procedure for Proceedings Related to Professional Conduct are confidentiality of proceedings and fair process to the member and candidate.

A is incorrect because the two principles of the Rules of Procedure for Proceedings Related to Professional Conduct are confidentiality of proceedings and fair process to the member and candidate.

C is incorrect because the two principles of the Rules of Procedure for Proceedings Related to Professional Conduct are confidentiality of proceedings and fair process to the member and candidate.

Code of Ethics and Standards of Professional Conduct
LOS a
Section 1.1

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5 In order to achieve compliance with GIPS Standards, it is recommended that firms:

A adopt the broadest, most meaningful definition of the firm.

B provide existing clients a compliant presentation applicable to their portfolio, at a minimum of a bi-annual basis.

C define the firm by including all geographical offices operating under the same firm name.

A is correct. The Fundamentals of Compliance recommend that firms should adopt the broadest, most meaningful definition of the firm.

B is incorrect, firms are recommended to provide each client, on an annual basis, a compliant presentation of the composite in which the client's portfolio is included.

C is incorrect, the scope of the definition should include all geographical offices operating under the same brand name regardless of the actual name of the individual investment management company.

The GIPS Standards
LOS b

6 Which of the following is **not** a component of the CFA Institute Code of Ethics?

A Promote financial integrity and seek to prevent and punish abuses in the financial markets.

B Place the integrity of the investment profession and the interests of clients above their own personal interests.

C Practice and encourage others to practice in a professional and ethical manner that will reflect credit on themselves and the profession.

A is correct. Punishing abuses in the financial sector is not included in any of the six components of the CFA Code of Ethics.

B is incorrect because placing the integrity of the investment profession and the interests of clients above their own personal interests is one of the six components of the Code of Ethics.

C is incorrect because practicing and encouraging others to practice in a professional and ethical manner that will reflect credit on themselves and the profession is one of the six components of the Code of Ethics.

Code of Ethics and Standards of Professional Conduct
LOS b

7 Jiro Sato, CFA, deputy treasurer for May College, manages the Student Scholarship Trust. Sato issued a Request for Proposal (RFP) for domestic equity managers. Pamela Peters, CFA, a good friend of Sato, introduces him to representatives from Capital Investments, who submitted a proposal. Sato selected Capital as a manager based on the firm's excellent performance record. Shortly after the selection, Peters, who had outstanding performance as an equity manager with another firm, accepted a lucrative job with Capital. Which of the CFA charterholders violated the CFA Institute Standards of Professional Conduct?

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A Both violated Standards.

B Peters violated Standards.

C Neither violated Standards.

C is correct because members should use reasonable care and judgment to maintain independence and objectivity [Standard I(B)]. There is no indication of inappropriate behavior in selection of the equity manager or in the acceptance of employment with that manager; both decisions were based on the excellent performance records of the manager and the member, respectively.

A is incorrect because there is no indication of inappropriate behavior in selection of the equity manager or in the acceptance of employment with that manager; both decisions were based on the excellent performance records of the manager and the member, respectively.

B is incorrect because there is no indication that Peters or Sato violated Standard I(B) by Peters joining Capital.

Guidance for Standards I–VII
LOS a
Standard I(B)–Independence and Objectivity

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

A Disclosure of Conflicts

B Priority of Transactions

C Additional Compensation Arrangements

A is correct because according to Standard VI(A)–Disclosure of Conflicts, Grabbo should disclose to her employer her hedge fund development as this activity could possibly interfere with her responsibilities at Atlantic. In setting up a hedge fund, Grabbo was not acting for the benefit of her employer. She should have informed Atlantic that she wanted to organize the hedge fund and come to some mutual agreement on how this would occur.

B is incorrect as the hedge fund will trade in international securities while Atlantic trades in domestic securities so it is unlikely their investments will conflict with each other. Additionally, policies and procedures needed to address Standard VI(B)–Priority of Transactions will be required in the future, but are not needed at the present time, as the fund is not trading.

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C is incorrect as the hedge fund will likely provide Grabbo additional compensation in the future [Standard IV(B)], but currently she is not receiving additional compensation as the fund is still in development. This will, however, need to be addressed in the future.

Guidance for Standards I–VII
LOS a
Standard IV(B)–Additional Compensation Arrangements, Standard VI(A)–Disclosure of Conflicts, Standard VI(B)–Priority of Transactions

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

A Assess the risk tolerance of the fund.

B Analyze the expected returns of private equity in the market.

C Determine if the Investment Policy Statement allows for alternative investments.

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

A is incorrect because assessing risk of a client is a key role in determining investment suitability.

C is incorrect because before introducing a new asset class, it must be determined if that asset class is an allowable asset class as defined by the Investment Policy Statement.

Guidance for Standards I–VII
LOS c
Standard III(C)–Suitability

10 The Global Investment Performance Standards (GIPS) were developed for the benefit of:

A prospective clients.

B regulators.

C broker/dealers.

A is correct. The GIPS standards benefit two main groups: investment management firms and prospective clients. GIPS presentations allow prospective clients to know that the track record of a prospective GIPS compliant fund manager is complete and fairly presented.

B is incorrect because the GIPS standards benefit two main groups: investment management firms and prospective clients. While they may benefit regulators in supervising marketing information, the GIPS standards were not developed with regulators in mind.

C is incorrect because the GIPS standards benefit two main groups: investment management firms and prospective clients. Only firms managing money can claim GIPS compliance.

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

11 Mariam Musa, CFA, head of compliance at Dunfield Brokers, questions her colleague Omar Kassim, a CFA candidate and a research analyst, about his purchase of shares in a company for his own account immediately before he publishes a "buy" recommendation. He defends his actions by stating he has done nothing wrong because Dunfield does not have any personal trading policies in place. The CFA Institute Code of Ethics and Standards of Professional Conduct were most likely violated by:

A only Musa.

B only Kassim.

C both Musa and Kassim.

C is correct because both Musa and Kassim violated the Standards of Professional Conduct. Musa violated Standard IV(C)–Responsibilities of Supervisors by not ensuring that policies were in place to prevent violations of the Code and Standards (in this case Standard VI(B)–Priority of Transactions) by someone subject to her supervision. As the head of compliance, Musa supervised Kassim and must meet her supervisory responsibilities outlined in the Standards of Professional Conduct. Kassim violated Standard VI(B)–Priority of Transactions in that he did not give sufficient priority to Dunfield's clients before trading on his recommendation.

A is incorrect because Kassim also violated the Standards (Priority of Transactions) in that he did not give sufficient priority to Dunfield's clients before trading on his recommendation.

B is incorrect because Musa also violated the Standards (Responsibilities of Supervisors) by not ensuring that policies were in place to prevent violations of the Code and Standards (in this case Standard VI(B)–Priority of Transactions) by someone subject to her supervision.

Guidance for Standards I–VII
LOS b
Standard IV(C)–Responsibilities of Supervisors, Standard VI(B)–Priority of Transactions

12 Oliver Opdyke, CFA, works for an independent research organization that does not manage any client money. In the course of his analysis of Red Ribbon Mining he hears rumors that the president of Red Ribbon, Richard Leisberg, has recently been diagnosed with late stage Alzheimer's disease, a fact not publicly known. The final stage of Alzheimer's is when individuals lose the ability to respond to their environment, the ability to speak, and, ultimately, the ability to control movement. Leisberg is the charismatic founder of Red Ribbon, and under his leadership the company grew to become one of the largest in the industry. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, the most appropriate action for Opdyke is to:

A immediately publish a sell recommendation for Red Ribbon Mining.

B confirm the president's diagnosis before publishing his research report.

C encourage Red Ribbon Mining management to disclose the president's medical condition.

C is correct because members and candidates should make reasonable efforts to achieve public dissemination of information that is material and nonpublic, as required by Standard II(A)–Material Nonpublic Information. This effort usually entails encouraging the issuer company to make the information public. In this case, if the diagnosis is fact and not rumor, then this information is material and should be disclosed.

A is incorrect because members and candidates should make reasonable efforts to achieve public dissemination of information that is material and nonpublic. This effort usually entails encouraging the issuer company to make the information public. In publishing a sell recommendation immediately, the analyst would be relying upon material nonpublic information and be in violation of Standard II(A)–Material Nonpublic Information.

B is incorrect because members and candidates must not knowingly engage in any conduct that may induce company insiders to privately disclose material nonpublic information or to trade on such information. The information about the president's medical condition is material and nonpublic. By publishing a recommendation based in part on information privately disclosed, the analyst would be relying upon material nonpublic information and be in violation of Standard II(A)–Material Nonpublic Information.

Guidance for Standards I–VII
LOS c
Standard II(A)–Material Nonpublic Information

13 Based on his superior return history, Vijay Gupta, CFA, is interviewed by the First Faithful Church to manage the church's voluntary retirement plan's equity portfolio. Each church staff member chooses whether to opt in or out of the retirement plan according to his or her own investment objectives. The plan trustees tell Gupta that stocks of companies involved in the sale of alcohol, tobacco, gambling, or firearms are not acceptable investments given the objectives and constraints of the portfolio. Gupta tells the trustees he cannot reasonably execute his strategy with these restrictions and that all his other accounts hold shares of companies involved in these businesses because he believes they have the highest alpha. By agreeing to manage the account according to the trustees' wishes, does Gupta violate the CFA Institute Standards of Professional Conduct?

A No.

B Yes, because the manager was hired based upon his previous investment strategy.

C Yes, because the restrictions provided by the Trustees are not in the best interest of the members.

A is correct. Standard III(A)–Loyalty, Prudence, and Care, Gupta's duty of loyalty, prudence, and care is owed to the participants and beneficiaries (members) of the pension plan. As a church plan, the restrictions are appropriate given the objectives and constraints of the portfolio.

B is incorrect because this is irrelevant as the manager has been given a specific mandate by the church trustees.

C is incorrect because the restrictions are appropriate and known to the members as they each individually opt into the plan given the objectives and constraints of the portfolio.

Guidance for Standards I–VII
LOS b
Standard III(A)–Loyalty, Prudence, and Care

14 Edo Ronde, CFA, an analyst for a hedge fund, One World Investments, is attending a key industry conference for the microelectronics industry. At lunch in a restaurant adjacent to the conference venue, Ronde sits next to a table of conference attendees and is able to read their nametags. Ronde realizes the group includes the president of a publicly traded company in the microelectronics industry, Fulda Manufacturing, a company Ronde follows. Ronde overhears the president complain about a production delay problem Fulda's factories are experiencing. The president mentions that the delay will reduce Fulda earnings more than 20% during the next year if not solved. Ronde relays this information to the portfolio manager he reports to at One World explaining that in a recent research report he recommended Fulda as a buy. The manager asks Ronde to write up a negative report on Fulda so the fund can sell the stock. According to the CFA Institute Code of Ethics and Standards of Professional Conduct Ronde should *least likely*:

A revise his research report.

B leave his research report as it is.

C request the portfolio manager not act on the information.

A is correct because Ronde should refuse to follow his supervisor's request. If Ronde revises his research report based on the information he overheard at the industry conference he would violate Standard II(A)–Material Nonpublic Information. The production delay information is material and considered nonpublic until it is widely distributed, so it should not be included in Ronde's research report or acted on until it becomes public. Ronde should try to encourage Fulda to make the information public.

B is incorrect because the production delay information is considered material and nonpublic until it is widely distributed and should not be included in Ronde's research report or acted on until it becomes public.

C is incorrect because the information Ronde overheard at the industry conference is material nonpublic information and should not be acted on until it becomes public.

Guidance for Standards I–VII
LOS c
Standard II(A)–Material Nonpublic Information

15 What is the theory that *best* describes the process by which financial analysts combine material public information and nonmaterial nonpublic information as a basis for investment recommendations even if those conclusions would have been material inside information had they been communicated directly to the analyst by the company?

A Mosaic theory

B Economic theory

C Probability theory

A is correct because the process by which financial analysts combine material public information and nonmaterial nonpublic information as a basis for investment recommendations even if those conclusions would have been material inside information had they been communicated directly to the analyst by the company is known as Mosaic Theory.

B is incorrect because economic theory is a general term used to describe a number of financial and economic relationships and is not specific to nonpublic information

C is incorrect because probability theory is a statistical concept that is not related to nonpublic information.

Guidance for Standards I–VII
LOS a
Standard II(A)–Material Nonpublic Information

16 Ken Kawasaki, CFA, shares a building with a number of other professionals who are also involved in the investment management business. Kawasaki makes arrangements with several of these professionals, including accountants and lawyers, to refer clients to each other. An informal score is kept on the expectation the referrals will equal out over time, eliminating the need for any cash payments. Kawasaki never mentions this arrangement to clients or prospective clients. Does Kawasaki's agreement with the other building occupants *most likely* violate any CFA Institute Standards of Professional Conduct?

A No.

B Yes, related to referral fees.

C Yes, related to communication with clients.

B is correct because Standard VI(C) requires disclosure of any compensation, consideration, or benefit received from or paid to others for the recommendation of products or services. Even without cash changing hands the arrangement provides for a quid pro quo referral of clients and should be disclosed.

A is incorrect because Kawasaki has violated the Standards.

C is incorrect because this Standard has not been violated as it relates to disclosure to clients of the general principles of the investment process used and not disclosure of any compensation, consideration, or benefit received from or paid to others for the recommendation of products or services as Standard VI(C) requires.

Guidance for Standards I–VII
LOS b
Standard V(B)–Communication with Clients and Prospective Clients, Standard VI(C)–Referral Fees

17 Meshack Bradovic, CFA, was recently hired as a credit analyst at a credit rating agency whose major clients include publicly listed companies on the local stock exchange. One of the clients is currently preparing to issue a new bond to finance a major factory project. Analysts are speculating that without the new factory the company will not survive the onslaught of competition from increasing imports; therefore, the company is counting on an upgraded credit rating to enhance the subscription level of the issue. Bradovic's research suggests that the creditworthiness of the company has severely deteriorated over the last year due to negative operating cash flows. Without conducting extensive research, Bradovic's boss puts pressure on him to upgrade the credit rating to an investment grade rating. Bradovic reports this to the firm's compliance department where he is encouraged to follow his boss's advice. What course of action is *most* appropriate for Bradovic to prevent any violation of the CFA Institute Code or Standards?

A Quit his position with the firm

B Upgrade the rating but note his objections in writing

C Disassociate with the credit rating report, the bond issue and the client

A is correct as the boss' insistence that all credit ratings be given an investment grade rating irrespective of the analysis undertaken indicates a systemic disregard for due diligence, reasonable basis, and true representation. This shows a total disregard for the Standards, in particular Standard V(A)–Diligence and Reasonable Basis. Bradovic's best course of action consequently is to resign as the company's current practice of giving false credit ratings is likely to continue.

B is incorrect because by upgrading the credit report he would be participating in a misrepresentation, even with a note of objection. This would violate the Code and Standards

C is incorrect because by disassociating with this particular credit report, bond issue, and client he can remove himself from a situation that would likely cause a misrepresentation to the true creditworthiness of the bond issue. However, due to the systemic nature of the violations as his boss always insists on an investment grade rating, it is evident that the company does not intend to act in an ethical manner. As the practice of giving false credit ratings is likely to continue, the analyst should quit the company.

Guidance for Standards I–VII
LOS c
Standard V(A)–Diligence and Reasonable Basis

18 Manuel Tacqueria, CFA, is a sole proprietor investment adviser managing accounts for a diversified group of clients. Tacqueria obtains his investment research through a subscription service with Alpha Services, a large financial services organization. Tacqueria notes that the research reports are sound because they are extremely detailed and comprehensive. As a result, Tacqueria feels comfortable relying solely upon this research when making recommendations to clients. Tacqueria should *most likely* do which of the following in order to conform to the CFA Institute Code of Ethics and Standards of Professional Conduct?

A Utilize additional sources of third-party research

B Undertake and add his own research to the existing reports

C Conduct additional due diligence on Alpha Services

C is correct because Tacqueria is in violation of Standard V(A)–Diligence and Reasonable Basis as he is required to undertake due diligence efforts on the third-party research provider on a regular basis to ensure that the quality of this research continues to meet his necessary standards.

A is incorrect because the Code and Standards would not require this action. Tacqueria is in violation of Standard V(A)–Diligence and Reasonable Basis as he is required to undertake due diligence efforts on the third-party research provider on a regular basis to ensure that the quality of this research continues to meet his necessary standards.

B is incorrect because the Code and Standards would not require this action. Tacqueria is in violation of Standard V(A)–Diligence and Reasonable Basis as he is required to undertake due diligence efforts on the third-party research provider on a regular basis to ensure that the quality of this research continues to meet his necessary standards.

Guidance for Standards I–VII
LOS b
Standard V(A)–Diligence and Reasonable Basis

19 A financial contract offers to pay €1,200 per month for five years with the first payment made immediately. Assuming an annual discount rate of 6.5%, compounded monthly the present value of the contract is *closest* to:

A €63,731.

B €61,330.

C €61,663.

C is correct. Using a financial calculator: *N* = 60; the discount rate (*I*/*Y*) = (6.5%/12) = 0.54166667; PMT = €1,200; Future value = €0; Mode = Begin; Calculate present value (PV): PV = €61,662.62.

Alternatively: Treat the stream as an ordinary annuity of 59 periods and add the current value of €1,200 to the derived answer. Using a financial calculator: *N* = 59; the discount rate (*I*/*Y*) = (6.5%/12) = 0.54166667; PMT = €1,200; Future value = €0; Mode = End; Calculate PV: PV = €60,462.62; Total PV = €1,200 + €60,462.62 = €61,662.62.

A is incorrect. This is the PV of an annuity due of 5 periods, 6.5% interest, and payments of 14,400 (1,200 × 12): *N* = 5; the discount rate (*I*/*Y*) = 6.5; PMT = 14,400; FV = 0; Mode = Begin; Calculate PV = 63,731.49.

B is incorrect. This is the PV of a 60-month ordinary annuity. *N* = 60, the discount rate (*I*/*Y*) = 6.5/12; PMT = 1,200, FV = 0. Mode = End; Calculate PV: PV = 61,330.41.

The Time Value of Money
LOS d, e
Section 6.1

20 The following table shows the discrete uniform probability distribution of gross profits from the purchase of an option:

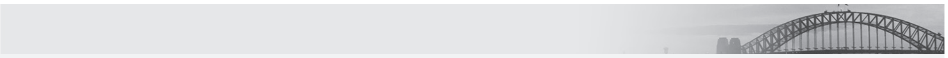
Profit	**Cumulative Distribution Function**
$0	0.2
$1	0.4
$2	0.6
$3	0.8
$4	1.0

The probability of a profit greater than or equal to $1 and less than or equal to $4 is *closest* to:

A 0.4.

B 0.6.

C 0.8.



C is correct. The problem deals with the discrete uniform distribution. This means that the five outcomes are all equally likely: $P(x) = 1/5 = 0.2$. There are two ways to find $P(1 \le X \le 4)$:

1 The sum of four probabilities is calculated: $P(1)$, $P(2)$, $P(3)$ and $P(4)$, $0.2 + 0.2 + 0.2 + 0.2 = 0.8$,

or

2 The probability is calculated as the difference between two values of the cumulative distribution function. In this case, $F(4) = P(X \le 4) = 1.0$ and $F(0) = P(X = 0) = 0.2$. Therefore, $P(1 \le X \le 4) = F(4) - F(0) = 1.0 - 0.2 = 0.8$.

A is incorrect because 0.4 is the probability of a profit less than or equal to \$1.
B is incorrect because 0.6 is the probability of a profit less than or equal to \$2.

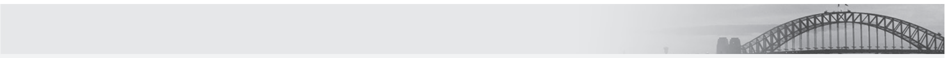
Common Probability Distributions
LOS d, f
Section 2.1

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

A internal rate of return.

B required rate of return.

C expected return.



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

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

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

The Time Value of Money
LOS a
Section 2

22 Investor A and Investor B invest in a fund for two years:

	Year 1	**Year 2**
Fund Return	Positive	Negative

Portfolio	**Money-Weighted Rate of Return**
Investor A	7.5%
Investor B	8.2%

Given the information in the table, which of the following is *least likely* to be an explanation for the difference between the two money-weighted rates of return?

A Investor A increased the investment in the fund at the end of year 1 whereas investor B did not make any additions or withdrawals.

B Investor B decreased the investment in the fund at the end of year 1 whereas investor A did not make any additions or withdrawals.

C The investors invested different amounts at inception and afterward did not make any additions or withdrawals.

C is correct. The money-weighted rate of return (MWR) is sensitive to the additions and withdrawals of funds in a portfolio over the course of an investment. If, at inception, investors A and B invest amounts of different size in the same fund but then neither add nor withdraw any cash for two years, they will obtain exactly the same MWR. In contrast, if investor A increases the investment in the fund at the end of year 1 and investor B does not make any additions or withdrawals, then Investor A will have a lower MWR than investor B because in year 2 the fund underperformed with respect to year 1. By the same token, if investor B decreases the investment at the end of year 1 and investor A does not make any additions or withdrawals, then investor B will have a higher MWR than investor A because she decreased the investment before an underperforming year.

A is incorrect. If investor A increases the investment in the fund at the end of year 1 and investor B does not make any additions or withdrawals, then the former will have a lower MWR than the latter because in year 2 the fund underperformed with respect to year 1.

B is incorrect. If investor B decreases the investment at the end of year 1 and investor A does not make any additions or withdrawals, then the former will have a higher MWR than the latter because she decreased the investment before an underperforming year.

Discounted Cash Flow Applications
LOS d
Section 3

23 All else held constant, the width of a confidence interval for a population mean is *most likely* to be smaller if the sample size is:

A larger and the degree of confidence is lower.

B larger and the degree of confidence is higher.

C smaller and the degree of confidence is lower.

A is correct. As the degree of confidence is increased, the confidence interval becomes wider. A larger sample size decreases the width of a confidence interval.

B is incorrect. As the degree of confidence is increased, the confidence interval becomes wider. A larger sample size decreases the width of a confidence interval.

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C is incorrect. As the degree of confidence is increased, the confidence interval becomes wider. A larger sample size decreases the width of a confidence interval.

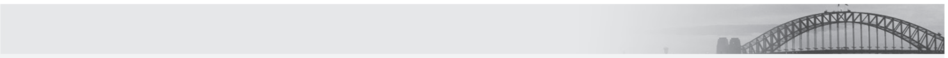
Sampling and Estimation
LOS j
Sections 4.2, 4.3

24 A two-tailed test of the null hypothesis that the mean of a distribution is equal to 4.00 has a *p*-value of 0.0567. Using a 5% level of significance (i.e., $\alpha = 0.05$), the *best* conclusion is to:

A fail to reject the null hypothesis.

B increase the level of significance to 5.67%.

C reject the null hypothesis.



A is correct. Because the *p*-value (0.0567) exceeds the stated level of significance (0.05), the null hypothesis cannot be rejected.

B is incorrect. A 5% confidence level does not allow the significance level to be increased beyond 5%.

C is incorrect. As the *p*-value (0.0567) exceeds the stated level of significance (0.05), the null hypothesis cannot be rejected.

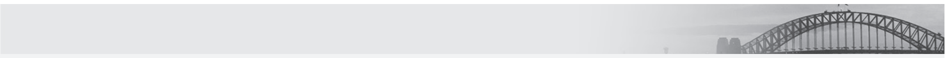
Hypothesis Testing
LOS f
Section 2

25 A price range in which selling is sufficient to stop the rise in price is *best* described as:

A change in polarity.

B resistance.

C support.



B is correct. Resistance is defined as a price range in which selling activity is sufficient to stop the rise in price.

A is incorrect. Change in polarity refers to support, when breached, becomes resistance; resistance, when breached, becomes support.

C is incorrect. Support is defined as a low price range in which buying activity is sufficient to stop the decline in price.

Technical Analysis
LOS c
Section 3.2

26 A portfolio manager would like to calculate the compound rate of return on an investment. Which of the following mean returns will he *most likely* use?

A Geometric

B Harmonic

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C Arithmetic

A is correct. The geometric mean return represents the growth rate or compound rate of return on an investment.

B is incorrect. The harmonic mean may be viewed as a special type of weighted mean in which an observation's weight is inversely proportional to its magnitude. The harmonic mean is a relatively specialized concept of the mean that is appropriate when averaging ratios ("amount per unit") when the ratios are repeatedly applied to a fixed quantity to yield a variable number of units.

C is incorrect. The arithmetic mean return reflects the average of the single-periods performance.

Statistical Concepts and Market Returns
LOS m
Section 5.4.2

27 A portfolio manager estimates the probabilities of the following events for a mutual fund:

- Event A: the fund will earn a return of 5%.
- Event B: the fund will earn a return below 5%.

The *least* appropriate description of the events is that they are:

A dependent.

B mutually exclusive.

C exhaustive.

C is correct. Events are exhaustive when they cover all possible outcomes. Mutually exclusive means that only one event can occur at a time. Two events are dependent if the occurrence of one event does affect the probability of occurrence of the other event. In this situation, Event A and B are both mutually exclusive (because they cannot occur at the same time) and dependent (because if one event occurs, the probability of the other becomes zero). However, the two events are not exhaustive because they do not cover the event that the fund will earn a return above 5%.

A is incorrect. Events A and B are dependent because if one event occurs, the probability of the other becomes zero.

B is incorrect. Events A and B are mutually exclusive because they cannot occur at the same time.

Probability Concepts
LOS a, g
Section 2

28 The effective annual yield (EAY) for an investment is 8.0%. Its bond equivalent yield is *closest* to:

A 8.00%.

B 7.85%.

C 8.16%.

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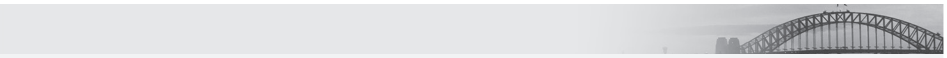


B is correct. EAY = $(1 + \text{YTM})^{365/t} - 1$

Semiannual yield to maturity, YTM = $(1 + 0.08)^{0.5} - 1 = 0.03923 = 3.923\%$

Bond equivalent yield = 2 × YTM = 2 × 3.923% = **7.85%**

A is incorrect. It Assumes EAY is the same as BEY.

C is incorrect. It is calculated as $(1 + 0.04)^2 - 1 = 0.0816 = 8.16\%$, where 4% is being compounded for two periods.

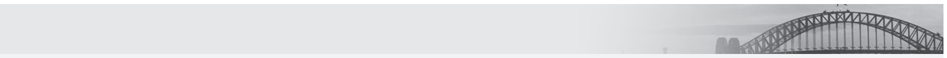
Discounted Cash Flow Applications
LOS f
Section 4

29 With Bayes' formula, it is possible to update the probability for an event given some new information. Which of the following *most* accurately represents Bayes' formula?

A $P(\text{Event} \mid \text{Information}) = \dfrac{P(\text{Information} \mid \text{Event})}{P(\text{Information})} P(\text{Event})$

B $P(\text{Event} \mid \text{Information}) = \dfrac{P(\text{Information})}{P(\text{Information} \mid \text{Event})} P(\text{Event})$

C $P(\text{Event} \mid \text{Information}) = \dfrac{P(\text{Information} \mid \text{Event})}{P(\text{Event})} P(\text{Information})$



A is correct. In probability notation, Bayes' formula can be written concisely as

$$P(\text{Event} \mid \text{Information}) = \frac{P(\text{Information} \mid \text{Event})}{P(\text{Information})} P(\text{Event})$$

B is incorrect. In probability notation, Bayes' formula can be written concisely as:

$$P(\text{Event} \mid \text{Information}) = \frac{P(\text{Information} \mid \text{Event})}{P(\text{Information})} P(\text{Event})$$

C is incorrect. In probability notation, Bayes' formula can be written concisely as:

$$P(\text{Event} \mid \text{Information}) = \frac{P(\text{Information} \mid \text{Event})}{P(\text{Information})} P(\text{Event})$$

Probability Concepts
LOS d, n
Sections 2, 4.1

30 An analyst collects data relating to five commonly used measures of leverage and interest coverage for a randomly chosen sample of 300 firms. The data comes from those firms' fiscal year 2012 annual reports. These data are *best* characterized as:

A time-series data.

B cross-sectional data.

C longitudinal data.

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B is correct. Data on some characteristics of companies at a single point in time are cross-sectional data.

A is incorrect. The data are not time-series data.

C is incorrect. The data are not longitudinal data.

Sampling and Estimation
LOS d
Section 2.3

31 Over a four-year period, a portfolio has returns of 10%, –2%, 18%, and –12%. The geometric mean return across the period is *closest* to:

A 3.5%.

B 8.1%.

C 2.9%.

C is correct. The geometric mean return is calculated as:

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

$$= [(1 + 0.10) \times (1 - 0.02) \times (1 + 0.18) \times (1 - 0.12)]^{0.25} - 1$$

$$= 0.0286 \sim 2.9\%$$

A is incorrect. It is the arithmetic average and is calculated as: (10 – 2 +18 – 12)/4 = 3.5%.

B is incorrect. It is the geometric average of the given numbers, but without adding one, i.e., $(10 \times -2 \times 18 \times -12)^{0.25} = 8.10\%$.

Statistical Concepts and Market Returns
LOS e
Section 5.4.2

32 An equally weighted portfolio is composed of four stocks. An analyst knows the mean and variance for each of the four stocks. In order to estimate the portfolio mean and variance, the analyst will require the stocks':

A skewness.

B pairwise correlations.

C kurtosis.

B is correct. Specification of the mean and variance for a portfolio of four stocks requires estimates of the mean returns and variances for each of the four stocks and the pairwise correlations between each of the four stocks.

A is incorrect because skewness measures are not required to estimate the mean and variance of a portfolio.

C is incorrect because kurtosis measures are not required to estimate the mean and variance of a portfolio.

Common Probability Distributions
LOS j
Section 3.2

33 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

34 If the prices of substitute resources decrease, the demand for a given resource will *most likely*:

A remain unchanged.

B decrease.

C increase.

B is correct. A decrease in the price of a substitute resource would encourage producers to use the substitute resource thus reducing demand for the resource in question.

C is incorrect. A decrease in the price of a substitute good would induce consumers to use the substitute good, reducing demand for the good in question.

A is incorrect. A decrease in the price of a substitute good would induce consumers to use the substitute good, reducing demand for the good in question.

Topics in Demand and Supply Analysis
LOS a
Section 2.4

35 The following equations have been developed for a company:

Demand curve: $P = 150 - 5 \times Q$

Total revenue curve: $\text{TR} = 150 \times Q - 5 \times Q^2$

Marginal revenue curve: $\text{MR} = 150 - 10 \times Q$

Total cost curve: $\text{TC} = Q^3 - 10 \times Q^2 + 73 \times Q + 120$

Average cost curve: $\text{AC} = Q^2 - 10 \times Q + 73 + 120/Q$

Marginal cost curve: $MC = 3 \times Q^2 - 20 \times Q + 73$

P indicates price per unit, and Q indicates cost per unit.

The profit maximizing output for this firm (in units) is *closest* to:

A 11.

B 8.

C 7.

C is correct. The profit maximizing output will arise when MR = MC.

$$MR = 150 - 10 \times Q = MC = 3 \times Q^2 - 20 \times Q + 73$$

On reduction, this becomes: $3 \times Q^2 - 10 \times Q - 77 = 0$
Only with $Q = 7$ will this equation be satisfied: $3 \times 7^2 - 10 \times 7 - 77 = 0$
Alternatively, by comparing net profit under each alternative:

Units	**Marginal revenue**	**Marginal cost**	**TR**	**TC**	**Net Profit**
7	$150 - 10 \times 7 = \mathbf{80}$	$3 \times 7^2 - 20 \times 7 + 73 = \mathbf{80}$	805	484	**321**
8	$150 - 10 \times 8 = 70$	$3 \times 8^2 - 20 \times 8 + 73 = 105$	880	576	304
11	$150 - 10 \times 11 = 40$	$3 \times 11^2 - 20 \times 11 + 73 = 216$	1045	1045	0

B is incorrect: it arises from setting P = MC

$$150 - 5 \times Q = 3 \times Q^2 - 20 \times Q + 73:$$

$$3 \times Q^2 - 15 \times Q - 77 = 0$$

Solve for $Q = 8.15$

A is incorrect. Where P = AC and where TR = TC, profits = 0.

The Firm and Market Structures
LOS b, c, d
Section 5.1

36 For a given economy and a given period of time, GDP measures the:

I. aggregate income earned by all households, all companies, and the government.

II. total income earned by all of the country's citizens, firms, and the government.

III. total market value produced of resalable and final goods and services.

The *most* appropriate description of what is measured by GDP is given by:

A I only.

B I and II.

C I and III.

A is correct. Gross domestic product (GDP) can be defined in terms of either output or income:

- it is the market value of all final goods and services produced within the economy in a given period of time (output definition) or, equivalently,
- it is the aggregate income earned by all households, all companies, and the government within the economy in a given period of time (income definition).

B is incorrect. GDP is the total income earned by all households and not country citizens.
C is incorrect. GDP includes the final goods and not the resalable (intermediate) goods.

Aggregate Output, Prices, and Economic Growth
LOS a
Section 2.1

37 The following information applies to a hypothetical economy:

Total population	1,100
Working age population	975
Labor force	750
Underemployed	120
Unemployed	95
Discouraged workers	80
Frictionally unemployed	25
Voluntarily unemployed	40

The unemployment rate is *closest* to:

A 12.7%.

B 16.0%.

C 9.7%.

A is correct. Unemployment rate = (Unemployed/Labor force) × 100 = (95/750) × 100 = 12.7%.

B is incorrect. It includes the frictionally unemployed (which is already part of the unemployed): (95 + 25)/750 × 100 = 16.0%

C is incorrect. It compares the unemployed to the working age population: 95/975 × 100 = 9.7%.

Understanding Business Cycles
LOS d
Sections 4.1, 4.1.1

38 Three countries produce tables and chairs, and the output per worker per day in each country as follows:

Country	Tables	Chairs
A	60	80
B	40	60

Assume that Country C produces 10% more tables than Country B and 10% fewer chairs than Country A. Which country *most likely* has the greatest comparative advantage for producing tables? Country

A C

B B

C A

C is correct. A country has a comparative advantage if its opportunity cost for producing a product is less than the opportunity costs of its trading partners. Notice the cost of a table in units of chairs is lowest for Country A.

Country	**Tables**	**Chairs**	**Comparative Advantage (Chairs/ Tables)**
A	60	80	1.33
B	40	60	1.50
C	40 × 1.1 = 44	80 × 0.9 = 72	1.64

B is incorrect because Country A has the lowest ratio of chairs to tables.

A is incorrect because Country A has the lowest ratio of chairs to tables.

International Trade and Capital Flows
LOS c
Section 2.4.1

39 Which of the following is *least likely* to affect the growth of the economy?

A The workforce attending an average of 20 hours of training per year

B When capital depreciation exceeds gross investment within the economy

C An increase in the labor force that is offset by a decrease in the average hours worked per worker, making the total hours worked unchanged

C is correct. The total hours worked remained unchanged, and accordingly, the growth of the economy will not change.

A is incorrect because the training is expected to increase the productivity of the work force and accordingly will increase the growth of the economy.

B is incorrect because the net investment (gross investment less depreciated capital) is negative, which will decrease the growth of the economy.

Aggregate Output, Prices, and Economic Growth
LOS m
Section 4.2

40 The *most likely* initial (short-run) effect of demand–pull inflation is an increase in:

A finished good prices.

B employee wages.

C commodity prices.

C is correct. The effect of demand–pull inflation is an increase in the aggregate demand, which, in turn, leads to an increase (initially) in commodity prices.

A is incorrect. Commodity prices tend to increase initially.

B is incorrect. Commodity prices tend to increase initially.

Understanding Business Cycles
LOS h
Sections 4.2.4–4.2.4.2

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

A expand the economy through a lower policy interest rate.

B contract the economy through a lower policy interest rate.

C contract the economy by reducing bank reserves.

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

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

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

Monetary and Fiscal Policy
LOS h, k, m
Sections 2.3.2.1, 2.3.2.3

42 An investor examines the following rate quotes for the Brazilian real (BRL) and the Australian dollar (AUD) and shorts BRL500,000.

- Spot rate BRL/AUD: 2.1128
- BRL 1-year interest rate: 4.1%
- Forward rate BRL/AUD: 2.1388
- AUD 1-year interest rate: 3.1%

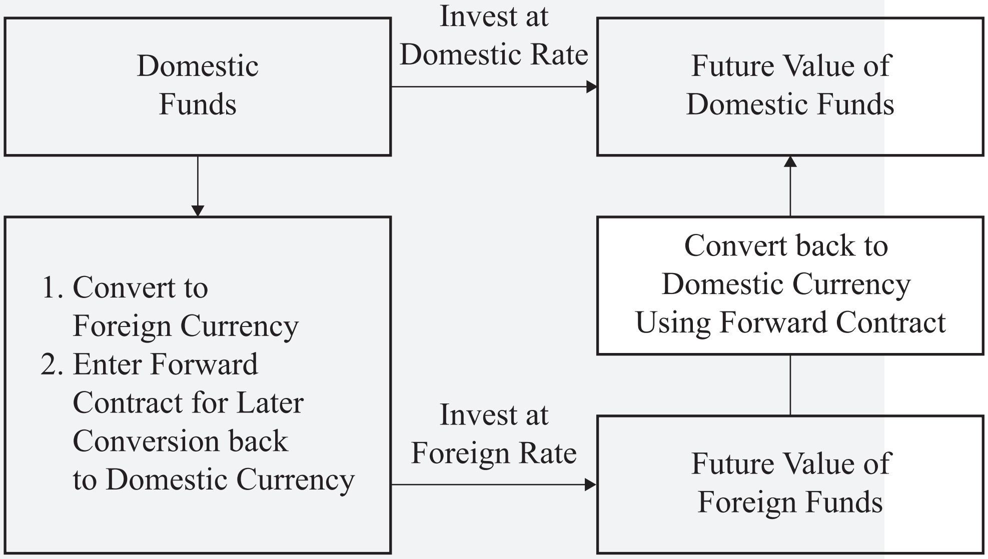
The risk-free arbitrage profit that is available is *closest* to:

A –BRL6,327.

B BRL1,344.

C BRL6,405.

B is correct. The equation below is often called the “covered interest arbitrage relationship” because if it is not satisfied, a risk-free arbitrage opportunity exists. It is based on the required equivalence of the two possible investment paths: if the two paths do not produce the same terminal result, an arbitrage profit exists.


Domestic Funds
Invest at Domestic Rate
Future Value of Domestic Funds
1. Convert to Foreign Currency
2. Enter Forward Contract for Later Conversion back to Domestic Currency
Convert back to Domestic Currency Using Forward Contract
Invest at Foreign Rate
Future Value of Foreign Funds

$$\left(1 + i_d\right) = S_{f/d}\left(1 + i_f\right)\left(\frac{1}{F_{f/d}}\right)$$

where

$S_{f/d}$ = Spot rate: number of units of foreign currency (price currency) per one unit of domestic currency

$F_{f/d}$ = Forward rate: number of units of foreign currency (price currency) per one unit of domestic currency

i_d = Domestic interest rate

i_f = Foreign interest rate

The left-hand side is 1 plus the return that is earned domestically. The right-hand side represents 1 plus the return from converting to foreign currency at the spot rate, investing at the foreign rate, and converting back to domestic currency using the forward rate.

The arbitrage profit is the right side of the equation minus the left side.

Left Side of Equation: BRL500,000 × (1 + 0.041) = BRL520,500

Right Side of Equation

Step	Transaction	Explanation
1	BRL500,000 × (1/2.1128AUD/BRL) = AUD236,653	Convert domestic to foreign
2	AUD236,653 × (1.031) = AUD243,989	Invest foreign at foreign rate
3	AUD243,989 × 2.1388 = BRL521,844	Convert foreign to domestic

Arbitrage profit = BRL521,844 – BRL520,500= BRL1,344

A is incorrect. The right side of the equation uses inverted exchange rates in Steps One and Three and 4.1% in Step Two.

Step One: BRL500,000 × (2.1128AUD/BRL) = AUD1,056,400

Step Two: AUD1,056,400 × (1.041) = AUD1,099,712

Step Three: AUD1,099,712 × (1/2.1388) = BRL514,173

Arbitrage profit = BRL514,173 (right side above) – BRL520,500 (left side above) = –6,327

C is incorrect. The right side of the equation uses 4.1% and thus 1.041 incorrectly in Step Two.

Step One: BRL500,000 × (1/2.1128AUD/BRL) = AUD236,653

Step Two: AUD236,653 × (1.041) = AUD246,355

Step Three: AUD246,355 × 2.1388 = BRL526,905

Arbitrage profit = BRL526,905 (right side above) – BRL520,500 (left side above) = 6,405

Currency Exchange Rates
LOS f, h
Section 3.3

43 Which of the following factors is *most likely* to lead to economies of scale?

A Supply constraints

B Duplication of product lines

C Specialization by workers

C is correct. Specialization by workers can increase their proficiency, leading to lower average costs when the firm is large enough to allow specialization.

A is incorrect. Supply constraints lead to higher resource prices, creating diseconomies.

B is incorrect. Duplication of product lines is a diseconomy.

Topics in Demand and Supply Analysis
LOS f
Section 3.3.2

44 A liquidity trap is *most* closely associated with:

A deflation.

B an inelastic demand for money.

C a positive nominal central bank policy rate.

A is correct. A liquidity trap arises when the demand for money is infinitely elastic because individuals elect to hold additional money balances rather than respond to stimulative rate cuts by spending. As a result, weakening consumption leads to deflation.

B is incorrect because a liquidity trap is associated with an infinitely elastic (rather than inelastic) demand for money.

C is incorrect because a liquidity trap arises in the extreme instance under which the monetary authority has cut nominal interest rates to zero to stimulate the economy and cannot cut rates any further.

Monetary and Fiscal Policy
LOS n
Section 2.5.2

45 Given stable inflation, a tight fiscal policy accompanied by easy monetary policy will *most likely*:

A increase the private sector share of GDP.

B have no impact on the private sector share of GDP.

C decrease the private sector share of GDP.

A is correct. If tight fiscal policy is accompanied by easy monetary policy and low interest rates, the private sector will be stimulated and will increase as a share of GDP.

B is incorrect. If tight fiscal policy is accompanied by easy monetary policy and low interest rates, the private sector share of GDP typically will increase (not remain unchanged). An unchanged composition of aggregate demand, with the GDP shares attributable to the private and public sectors remaining stable, typically occurs in the context of parallel policy actions. That occurs with mutually reinforcing macroeconomic policies, either tight fiscal/tight monetary or easy fiscal/easy monetary.

C is incorrect. If tight fiscal policy is accompanied by easy monetary policy and low interest rates, the private sector share of GDP typically will increase (not decrease).

Monetary and Fiscal Policy
LOS t
Sections 4, 4.1 and 4.2

46 Providing information about the performance of a company, its financial position, and changes in financial position that is useful to a wide range of users is *most* accurately described as the role of:

A financial reporting.

B the audit report.

C financial statement analysis.

A is correct. The role of financial reporting is to provide information about the performance of a company, its financial position, and changes in financial position that is useful to a wide range of users in making economic decisions.

B is incorrect. Audit reports express an opinion about the fair presentation of the financial statements.

C is incorrect. The role of financial statement analysis is to take the financial reports and evaluate the past, current, and prospective performance and financial position of a company for the purpose of making investment, credit, and other economic decisions.

Financial Statement Analysis: An Introduction
LOS a, d
Sections 2, 3.1.7

47 According to the International Accounting Standards Board's (IASB) Conceptual Framework for Financial Reporting, the two fundamental qualitative characteristics that make financial information useful are *best* described as:

A understandability and verifiability.

B relevance and faithful representation.

C timeliness and accrual accounting.

B is correct. Relevance and faithful representation are the two fundamental qualitative characteristics that make financial information useful, according to the IASB Conceptual Framework.

A is incorrect. Verifiability and understandability are two characteristics that enhance the usefulness of relevant and faithfully represented financial information.

C is incorrect. Timeliness enhances the usefulness of relevant and faithfully represented financial information. Accrual accounting is an underlying assumption.

Financial Reporting Standards
LOS d
Section 5.2

48 At the end of the year, a company reported an impairment loss on its manufacturing plant, reducing its carrying amount by 10%. The impairment loss is *least likely* to cause the company's:

A debt-to-asset ratio to increase.

B cash flow from operations to decline.

C fixed asset turnover to increase.

B is correct. The impairment loss is a non-cash charge and will not affect cash flow from operations.

A is incorrect. The statement is correct: the carrying amount of assets has been reduced, so the debt-to-asset ratio will increase.

C is incorrect. The statement is correct: the carrying amount of assets has been reduced, so the fixed asset turnover will increase.

Long-Lived Assets
LOS k, i
Section 5.1

49 Obligations arising from past events that are expected to result in an outflow of economic benefits from an entity are *most likely* known as:

A expenses.

B liabilities.

C operating activities.

B is correct. Liabilities are an element of the balance sheet and represent obligations of a company arising from past events, the settlement of which is expected to result in an outflow of economic benefits from the entity.

A is incorrect. Expenses are a component of the income statement and are defined as outflows, depletions of assets, and incurrences of liabilities in the course of the activities of a business.

C is incorrect. Operating activities are a classification used in the cash flow statement and include the cash flows resulting from a company's day-to-day activities that create revenue.

Understanding Balance Sheets
LOS a
Section 2

50 The following information applies to a capital asset of a company:

Year Ending	**2014**	**2013**	**2012**
Capital asset	€2,500	€2,500	€2,500
Accumulated depreciation	375	250	125
Net book value	2,125	2,250	2,375

This company uses the straight-line depreciation method for this capital asset.

At the end of 2014, the expected remaining life of the capital asset, in years, is *closest* to:

A 17.

B 20.

C 6.

A is correct. Based on the annual increase in accumulated depreciation, annual depreciation expense is $125 and the asset was acquired in 2012.

Total useful life of the capital asset = 2,500/125 = 20 years

Remaining useful life three years later = 20 years – 3 years = 17 years

Alternative calculation based on straight-line depreciation with no salvage value:

NBV/Depreciation expense = 2,125/125 = 17 years

B is incorrect. It is the total expected life (2,500/125 = 20 years).

C is incorrect. It incorrectly divides gross PPE by accumulated depreciation: 2,125/375 = 5.7, rounded to 6 years.

Long-Lived Assets
LOS d
Section 7

51 Because of significant changes in the marketplace, the demand for a company's product has fallen and is not expected to recover to previous levels. The following information is related to the patent under which the product is produced:

Item Description	**$ thousands**
Carrying value amount	36,000
Undiscounted expected future cash flows	38,000
Present value of expected future cash flows	32,000
Fair value if sold	34,000
Costs to sell	4,000

Which of the following statements is *most* accurate? The patent is impaired under:

A IFRS only.

B both IFRS and US GAAP.

C US GAAP only.

A is correct. Under IFRS (International Financial Reporting Standards), first determine the recoverable amount, which is the higher of:

1. value in use (the present value of the expected future cash flows) = $32,000 or
2. fair value minus costs to sell = $34,000 – 4,000 = $30,000

The recoverable amount ($32,000) is lower than the carrying value ($36,000). Therefore, the asset is impaired and should be written down to that amount.

Under US GAAP, to assess impairment, the carrying value ($36,000) is compared with the undiscounted expected future cash flows ($38,000). In this case, the carrying value is lower so the patent is not impaired.

B is incorrect because is it not impaired under US GAAP.

C is incorrect it is not impaired under US GAAP because the carrying value is greater than the undiscounted cash flows.

Long-Lived Assets
LOS i
Sections 5.1, 5.2

52 The method used by a high-end custom-built motorcycle manufacturer to value its inventory results in the matching of the physical flow of the particular items sold, and the items remaining in inventory, to their actual cost. Which of the following inventory valuation methods is the manufacturer *most likely* using?

A FIFO

B Weighted average cost

C Specific identification

C is correct. Specific identification is the inventory method that results in the matching of the physical flow of the particular items sold and would be most suitable for high-end custom-built motorcycles that are not ordinarily considered interchangeable.

A is incorrect. Although accepted by IFRS, this method is more suitable for interchangeable inventory.

B is incorrect. Although accepted by IFRS, this method is more suitable for interchangeable inventory.

Inventories
LOS b
Section 3.1

53 Net revenue *most likely* refers to revenue minus:

A revenues attributable to non-controlling interests.

B estimates of warranty expense.

C volume discounts and estimated returns.

C is correct. Net revenue means that the revenue number is reported after adjustments for cash or volume discounts or for estimated returns.

A is incorrect. Revenues attributed to non-controlling interests are not segregated on the income statement.

B is incorrect. Warranty expenses are operating expenses and not netted from revenues.

Understanding Income Statements
LOS a
Section 2

54 Consider the following information available for a company for last year:

ROE	4.74%
Net profit margin	2.6%
Revenue	$400,000
Average total assets	$300,000

The average shareholder's equity is *closest* to:

A $164,557.

B $123,418.

C $219,409.

C is correct. The DuPont equation is

$$\frac{\text{Net income}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Average total assets}} \times \frac{\text{Average total assets}}{\text{Average shareholders' equity}}$$

$$4.75\% = 2.6\% \times \frac{\$400{,}000}{\$300{,}000} \times \frac{\$300{,}000}{\text{Average shareholders' equity}}$$

Average shareholders' equity = $219,409

A is incorrect. It fails to divide by (Revenues/Average total assets):

($300,000/Average shareholders' equity) = 4.74%/2.6%

Average shareholders' equity = $164,557

B is incorrect. It uses (Average total assets/Revenue) instead of (Revenue/Average total assets).

($300,000/Average shareholders' equity) = (4.74%/2.6%)/($300,000/$400,000)

Average shareholders' equity = $123,418

Financial Analysis Techniques
LOS d
Section 4.6.2

55 A company's balance sheet shows the following values (€):

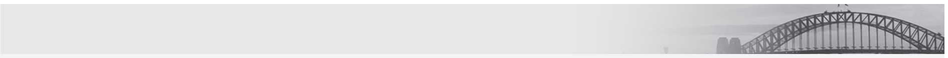
Cash	12,000
Marketable securities	3,000
Accounts receivable	16,500
Inventory	8,745
Prepaid expenses	2,305
Current liabilities	32,580

The company's cash ratio is *closest* to:

A 0.46.

B 0.97.

C 0.37.



A is correct. The cash ratio is

$$\frac{\text{Cash + Marketable securities}}{\text{Current liabilities}} = \frac{12{,}000 + 3{,}000}{32{,}580} = 0.460$$

B is incorrect. It calculates the quick ratio: [(Cash + Marketable securities + Receivables)/Current liabilities] = [(12,000 + 3,000 + 16,500)/32,580] = 0.970.

C is incorrect. It omits marketable securities: (Cash/Current liabilities) = 12,000/32,580 = 0.3683.

Understanding Balance Sheets
LOS h
Section 7.2
Financial Analysis Techniques
LOS b
Section 4.3.1

56 The following table presents excerpts from financial statements for two merchandising companies following the format found in each of their annual reports.

Company A (US$ millions)		**Company B (¥ millions)**	
Assets		**Assets**	
Noncurrent assets	9,640	Current assets	4,333
Current assets	2,096	Noncurrent assets	19,923
Total assets	11,736	Total assets	24,256

Which of the companies *most likely* prepares its financial statements in accordance with US GAAP?

A Only Company B

B Both companies

C Only Company A

A is correct. Company A prepares its financial statements under IFRS, and company B uses US GAAP. IFRS does not specify the order of presentation of current and non-current assets. Under US GAAP, current assets are presented before long-term assets and current liabilities before long-term ones.

B is incorrect. Long-term assets being presented prior to short-term assets (similarly for liabilities) follows the IFRS presentation style: only Company A follows this style.

C is incorrect. For company A, long-term assets are presented prior to short-term assets (similarly for liabilities), following the IFRS presentation style

Understanding Balance Sheets
LOS c
Section 2.1

57 If a company that leases assets for its own use classifies its leases as finance leases instead of as operating leases, its financial statements in the first year would *most likely* report:

A lower cash from operations.
B higher debt.
C higher equity.

B is correct. Classifying leases as finance leases rather than operating leases for a lessee would increase the amount of total debt reported because the present value of the total lease payments is recognized as a liability.

A is incorrect. CFO is higher because the lease payment is not deducted from NI, just the portion that is interest expense (unless interest expense is classified as a financing activity.

C is incorrect. The net income is normally lower under a finance lease, so equity would also be lower (retained earnings).

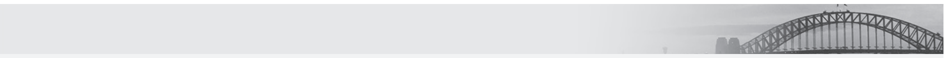
Non-Current (Long-Term) Liabilities
LOS g, h
Section 3.2.1

58 The following financial statement data are available for a company:

Metric	**Current Year (£ thousands)**	**Prior Year (£ thousands)**
Total debt	1,600	1,600
Total assets	4,800	5,200
Total liabilities	2,700	3,200

The company's financial leverage ratio for the current year is *closest* to:

A 3.12.
B 0.32.
C 2.44.



C is correct. Financial leverage ratio = Average total assets/Average shareholders' equity.

Metric	**Calculation (£ thousands)**	**£ thousands**
Average total assets	(4,800 + 5,200) × 0.5	5,000
Shareholders' equity (Total assets – Total liabilities)		
At start	5,200 – 3,200	2,000
At end	4,800 – 2,700	2,100
Average shareholders' equity	(2,000 + 2,100) × 0.5	2,050
Financial leverage ratio = Average total assets/Average shareholders' equity	5,000/2,050	2.44

A is incorrect. This calculation is average total assets to average total debt rather than financial leverage.

Metric	
Average total assets (as calculated above)	5,000
Average total debt	(1,600 + 1,600) × 0.5 = 1,600
Incorrect Financial leverage (Average total assets/Average total debt)	**3.12**

B is incorrect. This calculation is average debt-to-assets rather than financial leverage.

Metric	
Total debt	1,600
Average assets (from above)	5,000
Incorrect Financial leverage (Total debt /Total equity)	0.32

Financial Analysis Techniques
LOS b
Section 4.4
Non-current (Long-term) Liabilities
LOS k
Section 5

59 On 1 January 2011, a company that prepares its financial statements according to International Financial Reporting Standards (IFRS) issued bonds with the following features:

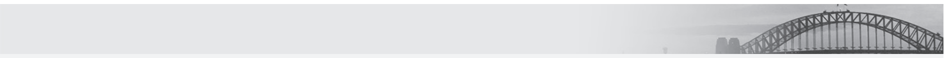
- Face value: £20,000,000
- Term: Five years
- Coupon rate: 6% paid annually on 31 December
- Market rate at issue: 4%

The company carries all its bonds at cost. In December 2013, the market rate on similar bonds had increased to 5%, and the company decided to buy back (retire) the bonds after the coupon payment on 31 December. As a result, the gain on retirement reported on the 2013 income statement income is *closest* to:

A £340,410.

B £371,882.

C £382,556.



C is correct.

Gain = Book value of debt – Market value
= £20,754,438 – £20,371,882
= £382,556

Both at time of retirement, calculations below.

The market value of debt at retirement can be determined by discounting the future cash flows at the current market rate (5%) by using a financial calculator:

Face value (FV) = £20,000,000; i = 5%; PMT = £1,200,000; N = 2; Compute present value (PV) = £20,371,882.

The book value after the third interest payment (two payments remaining) can be found by using either a financial calculator and the market rate at the time of issue (4%) or an amortization table (shown next).

FV = £20,000,000; i = 4%; PMT = £1,200,000; N = 2; Compute PV = £20,754,438.

The bond's initial value (required for amortization) can be found by using a financial calculator:

FV = 20,000,000; i = 4%; PMT = 1,200,000; N = 5; Compute PV = 21,780,729.

	Principal Value Beginning of year (£)	Interest Expense 4%	Coupon 6%	Premium Amortization (£)
2011	21,780,729	871,229	1,200,000	328,771
2012	21,451,958	858,078	1,200,000	341,922
2013	21,110,036	844,401	1,200,000	355,599
Book value at end of 2013	20,754,438			

A is incorrect. It uses the straight-line method of amortizing the bond premium, which is not permitted under IFRS:

Gain = Incorrect Book value of debt – Market value at time of retirement
= 20,712,292 – 20,371,882
= **340,410**

	Principal value Beginning of Year	Interest Expense 4%	Coupon 6%	Premium Amortization
2009	21,780,729	871,229	1,200,000	356,146
2010	21,424,583	856,983	1,200,000	356,146
2011	21,068,437	842,737	1,200,000	356,146

	Principal value Beginning of Year	Interest Expense 4%	Coupon 6%	Premium Amortization
Book value at end of 2011	20,712,292			
Market value with $i = 5\%$	20,371,882	FV = 20,000,000; $i = 5\%$, PMT = 1,200,000, $N = 2$; Compute PV		
Gain	340,410			

Or more simply: 21,780,729 – [3 × (21,780,729 – 20,000,000)/5] = 20,712,292.

B is incorrect. It takes the difference between the market value and the face value: 20,371,882 – 20,000,000 = 371,882.

Non-Current (Long-Term) Liabilities
LOS c
Sections 2.1, 2.2, 2.4

60 A global equity investor makes investment decisions based on only the P/E. The average P/E of all global equities is 14. The screen of a large number of global equities based on P/E resulted in the following distribution:

	Earnings Growth	P/E
Lower third	5%	8
Middle third	10%	15
Top third	8%	25

If the investor selects only stocks from the lower third of the distribution, it would be *most* appropriate to classify the investor as a:

A growth investor.

B market-oriented investor.

C value investor.

C is correct. This investor is interested in undervalued stocks (stocks with below-average P/E) and thus is a value investor.

A is incorrect. Growth investors would be more interested in the middle set.

B is incorrect. The investor clearly is looking for undervalued stocks and therefore is most likely a value investor.

Financial Statement Analysis: Applications
LOS d
Section 5

61 Information about a company's historical performance for the last two years and additional information are summarized in the following table.

($ thousands)	2013	2012
Sales	5,500.0	5,350.0
Cost of goods sold	–2,200.0	–2,140.0
Operating expenses	–2,350.0	–2,350.0
Gain on sale of short-term investments	0	140.0
Tax expense	–237.5	–325.0
Income (loss) from discontinued operations (net of tax)	–312.5	112.5
Net income	400.0	787.5

Industry sales are expected to increase 5%, and the company expects to maintain its current market share and gross profit margin. Operating expenses are not expected to change with the increase in sales.

The company sold off its portfolio of marketable securities in 2012 and used the funds to purchase operating assets. In 2012, the company announced its intention to sell off a division, and that sale was completed in 2013. The results from the division and the gain or loss incurred on the sale are classified as discontinued operations.

The projected net income (in thousands) for 2014 is *closest* to:

A $745.

B $836.

C $635.

B is correct. The loss (gain) from discontinued operations and the gain on the sale of the portfolio investments should not be included in the forecast becasue they are not recurring items. First, the recurring operating margin before tax should be forecasted, noting that the operating costs are fixed costs, and then the tax rate from 2013 should be used to determine net income.

($ thousands)	2014 forecast	2013		2012	
Sales (increase 5%)	$5,775	$5,500.0	100%	$5,350.0	100%
Cost of goods sold (40% each year)	2,310	2,200.0	40%	2,140.0	40%
Operating expenses (fixed cost)	2,350	2,350.0		2,350.0	
Recurring operating income	1,115	950.0		860	
Tax expense (25% × operating income)	279	237.5	(237.5/950) = 25%		
Net income	$836				

A is incorrect. It adjusts for the discontinued operations before calculating the margins

($ thousands)	2014 Forecast	2013	2012
Sales	5,775	5,500	5,350
Net income as reported		$400	$787.5

($ thousands)	2014 Forecast	2013	2012
Discontinued operations loss (gain)		312.5	(112.5)
Recurring EAT		712.5	675
Recurring EAT margin		12.9%	12.6%

Using the EAT margin of 12.9% × 5,775 = 745

C is incorrect. It takes the average margin of the two previous years without any adjustments for the non-recurring items or change in tax rate. (400/5,500 = 7.3%) and (787.5/5,350 = 14.7%).

$$\tfrac{1}{2}[7.3\% + 14.7\%] = 11.0\%$$

$$0.11 \times 1.05 \times 5{,}500 = \$635$$

Understanding Income Statements
LOS f, k
Section 5
Financial Statement Analysis: Applications
LOS b
Section 3.1

62 Which of the following companies would *most likely* be considered to have the lowest financial reporting quality, other things equal?

A A company that provides high quality, decision-useful information under GAAP but delays its reports.

B A company that reports significant profits due to a favorable exchange rate movement.

C A company that reports the results from two different segments as a combined entity.

C is correct. Combining the results from two segments is an example of biased reporting, which falls in the middle of the quality spectrum. It is difficult to interpret the profitability of each segment when their results are combined.

A is incorrect. The company's reports are high quality, but the delay in reporting impairs their usefulness somewhat. The reporting is still better than biased reporting.

B is incorrect. This is an example of decision-useful information about a result that may not be sustainable. Reporting is not of the highest quality, but is better than biased reporting.

Financial Reporting Quality
LOS b
Section 2

63 In accrual accounting, if an adjusting entry results in the reduction of an asset and the recording of an expense, the originating entry recorded was *most likely* a(n):

A deferred revenue.

B prepaid expense.

C accrued expense.

B is correct. The adjusting entry to record the expiry of a prepaid expense is the reduction of an asset (the prepaid) and the recognition of the expense.

A is incorrect. If the originating entry had been the recording of unearned (deferred revenue), the adjusting entry would be the reduction of the liability and the recording of revenue.

C is incorrect. If the originating entry had been the recording of an accrued expense (a liability and expense), the adjusting entry would be a reduction of the liability and an asset as the payment is made.

Financial Reporting Mechanics
LOS e
Section 5.1

64 Inherent risks in an investment are *most* appropriately evaluated in which step of the financial statement analysis framework?

A Develop and communicate conclusions/recommendations

B Articulate the purpose and context of analysis

C Process data

A is correct. Discussion and presentation of inherent risks in an investment is appropriate in the develop and communicate conclusions/recommendations step.

B is incorrect. Risks are evaluated and presented after data are collected and processed.

C is incorrect. Risks are evaluated and presented after data are collected and processed.

Financial Statement Analysis: An Introduction
LOS f
Sections 4.1–4.5

65 A company purchased equipment for $50,000 on 1 January 2011. It is depreciating the equipment over a period of 10 years on a straight-line basis for accounting purposes, but for tax purposes it is using the declining balance method at a rate of 20%. Given a tax rate of 30%, the deferred tax liability at the end of 2013 is *closest* to:

A $6,720.

B $2,820.

C $420.

B is correct. The deferred tax liability is equal to the tax rate × temporary difference between the carrying amount of the asset and the tax base.

Value for accounting purposes after three years	50,000 – [3 × (50,000/10)] =	$35,000
Value for tax purposes:		
Carrying amount = Start of year balance × (1 – 0.20)		

After three years:	50,000 × 0.8 × 0.8 × 0.8 =	25,600
Temporary difference		9,400
Deferred tax liability at 30%:	30% × 9,400 =	$2,820

A is incorrect. It is the sum of the three years of liabilities (1,500 + 2,400 + 2,820), but these amounts are ending liability amounts, not a cumulative amount.

C is incorrect. It is the deferred tax expense for the year, the difference between 2012 and 2013: 2,820 – 2,400 = 420.

Income Taxes
LOS c, d
Section 2.2

66 During a period of rising inventory costs, a company decides to change its inventory method from FIFO to the weighted average cost method. Under the weighted average method, which of the following financial metrics will *most likely* be higher than under FIFO?

A Current ratio

B Number of days in inventory

C Debt-to-equity ratio

C is correct. If all else is held constant, in a period of rising costs the ending inventory will be lower under the weighted average cost method and the cost of goods sold will be higher (compared to FIFO), resulting in lower net income and retained earnings. There will be no impact on the debt level, current or long-term. Therefore, the debt-to-equity ratio (Total debt/Total shareholders' equity) will increase because of the decrease in retained earnings (and lower shareholders' equity).

A is incorrect. In a period of rising costs, the ending inventory would be lower under the weighted average cost method and the cost of sales would be higher, resulting in lower net income and retained earnings. The lower value of inventory would reduce the value of current assets. Current liabilities would remain the same under both FIFO and the weighted average cost method. Therefore, the current ratio will decrease, not increase.

B is incorrect. The inventory turnover would increase (higher CGS/lower ending inventory), and that would result in a decrease in the days in inventory (365/higher number for inventory turnover).

Inventories
LOS c, k
Sections 3.7, 7.3

67 Which of the following is *most likely* to signal manipulation of financial reporting for a large, diversified company?

A A history of large expense items classified as unusual

B Operating margins out of line with other diversified companies

C Changes in accounting policies to reflect new accounting standards

A is correct. A history of unusual expense items may indicate a pattern of management manipulating the way investors perceive operating income performance. Repeated use of the "unusual" or "non-recurring" category decreases the value of this classification and suggests that management may be trying to manipulate users' perceptions of sustainable profitability levels.

B is incorrect. Diversified companies include a mix of businesses and, depending on that mix, may or may not be expected to have similar operating margins.

C is incorrect. Accounting policies must be changed to comply with new accounting standards. Changes for this purpose are not suspect.

Financial Reporting Quality
LOS i
Section 4.3

68 Under the indirect method, a US GAAP-compliant company reported total revenue of $359 million, net income of $35 million, a decrease in income tax payable of $16 million, and an increase in interest expense payable of $22 million. Based on this information, converting to the direct method would result in cash paid for operating expenses of:

A $330 million.

B $353 million.

C $318 million.

C is correct. The indirect-to-direct cash flow conversion process involves three steps.

Step 1: Total operating expenses = Total revenue – Net income = ($359 million – $35 million) = $324 million.

Step 2: There are no non-cash expenses or revenues, therefore Total expenses = $324 million, and Total cash revenues = $359 million.

Step 3: Total cash operating expenses = Total operating expenses plus the decrease in income tax payable minus the increase in interest expense payable = $324 million + $16 million – $22 million = $318 million.

A is incorrect because it incorrectly added the decrease in prepaid income tax payable and subtracted the decrease in other accrued liabilities. Therefore, cash paid for operating expenses is incorrectly converted as follows: $324 million – $16 million + $22 million = $330 million.

B is incorrect because it has based the calculation off of the total revenue amount of $359 million instead of the total expense amount of $324 million as follows: $359 + 16 million – $22 million = $353 million.

Understanding Cash Flow Statements
LOS g
Section 3.3

69 Under general principles of expense recognition, a company should:

A apply uniform treatment for administrative and depreciation costs.

B recognize expenses in the period that it consumes the associated economic benefits.

C allocate lost economic benefits prospectively over the expected period in which the benefits would have been earned.

B is correct. In general, a company recognizes expenses in the period that it consumes (i.e., uses up) the economic benefits associated with the expenditure or loses some previously recognized economic benefit.

A is incorrect because administrative and depreciation costs are not treated uniformly; administrative costs are expensed immediately, and depreciation is allocated over time.

C is incorrect because a company recognizes expenses in the period that it loses some previously recognized economic benefit or consumes the economic benefits associated with the expenditure, not when benefits would have been earned.

Understanding Income Statements
LOS e
Section 4.1

70 Which action is *most likely* considered a secondary source of liquidity?

A Increasing the efficiency of cash flow management

B Renegotiating current debt contracts to lower interest payments

C Increasing the availability of bank lines of credit

B is correct. Renegotiating debt contracts is a secondary source of liquidity because it may affect the company's operating and/or financial positions.

A is incorrect. Increasing cash flow management efficiency is a primary source of liquidity.

C is incorrect. Increasing bank lines of credit is a primary source of liquidity.

Working Capital Management
LOS a
Sections 2.1.1, 2.1.2

71 Which of the following is *most likely* considered an example of matrix pricing when determining the cost of debt?

A Debt-rating approach only.

B Yield-to-maturity approach only.

C Both the yield-to-maturity and the debt-rating approaches.

A is correct. The debt-rating approach is an example of matrix pricing.

B is incorrect because the yield-to-maturity approach is not an example of matrix pricing.

C is incorrect because the yield-to-maturity approach is not an example of matrix pricing.

Cost of Capital
LOS f
Section 3.1.1, 3.1.2

72 Given the following information, the degree of operating leverage (DOL) is *closest* to:

Income Statement	Millions ($)
Revenues	9.8
Variable operating costs	7.2
Fixed operating costs	1.5
Operating income	1.1
Interest	0.6
Taxable income	0.5
Tax	0.2
Net income	0.3

A 2.4.
B 1.1.
C 1.7.

A is correct.

$$\text{DOL} = \frac{\text{Revenues} - \text{Variable operating costs}}{\text{Revenues} - \text{Variable operating costs} - \text{Fixed operating costs}}$$

$$= \frac{9.8 - 7.2}{9.8 - 7.2 - 1.5}$$

$$= 2.36$$

B is incorrect because it is Revenues/(Variable operating costs + Fixed operating costs).
C is incorrect because it is (Revenues – Variable operating costs)/Fixed operating costs.

Measures of Leverage
LOS b
Section 3.3

73 Other factors held constant, the reduction of a company's average accounts payable because of suppliers offering less trade credit will *most likely*:

A not affect the operating cycle.
B reduce the operating cycle.
C increase the operating cycle.

A is correct. Payables are not part of the operating cycle calculation, which includes receivables and inventory.

B is incorrect. As per above, payables are not part of the operating cycle calculation.
C is incorrect. As per above, payables are not part of the operating cycle calculation.

Financial Analysis Techniques
LOS b
Section 4.3.2
Working Capital Management
LOS c
Section 2.2

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

A 13.9%.

B 14.7%.

C 16.3%.

B is correct. WACC = $w_d r_d(1 - t) + w_p r_p + w_e r_e = [0.12 \times (1 - 0.40) + 0.17 + 0.20]/3 = 14.73\%$.

A is incorrect because tax effect is miscalculated: $[0.12 \times 0.40 + 0.17 + 0.20]/3 = 13.93\%$.

C is incorrect because tax effect is ignored: $[0.12 + 0.17 + 0.20]/3 = 16.33\%$.

Cost of Capital
LOS a, b
Sections 2, 2.1

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

A expensed in the current period.

B incorporated into the estimated cost of capital.

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

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

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

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

Cost of Capital
LOS l
Section 4.4

76 Given two mutually exclusive projects with normal cash flows, the point at which their net present value profiles intersect the horizontal axis is *most likely* the projects':

A weighted average cost of capital.

B crossover rate.

C internal rate of return.

C is correct. For a project with normal cash flows, the NPV profile intersects the horizontal axis at the point where the discount rate equals the IRR. The crossover rate is the discount rate at which the NPVs of the projects are equal. Although it is possible that the crossover rate is equal to each project's IRR, it is not a likely event. It is also possible that the IRR is equal to the WACC, but that scenario is not the most likely one.

B is incorrect. The crossover rate is the discount rate at which the NPVs of the projects are equal. While it is possible that the crossover rate is equal to each project's IRR, it is not a likely event.

A is incorrect. The project's net present value (NPV) occurs when the NPV profile intersects the vertical axis or when the discount rate = 0.

Capital Budgeting
LOS e
Section 4.7

77 Based on best practices in corporate governance procedures, it is *most* appropriate for a company's compensation committee to:

A link compensation with long-term objectives.

B include a retired executive from the firm.

C include a representative from the firm's external auditor.

A is correct. Under appropriate corporate governance procedures, the compensation committee should link compensation with long-term objectives.

B is incorrect because the committee should be composed of independent members only. Good corporate governance procedures would require that executive (internal) directors not rule on matters underlying conflicts of interest or on matters requiring an unbiased judgment (such as audit, remuneration, or related-party transaction matters). Retired executives and external auditors are not independent and should not be a part of the compensation committee.

C is incorrect because the committee should be composed of independent board members only. Good corporate governance procedures would require that executive (internal) directors not rule on matters underlying conflicts of interest or on matters requiring an unbiased judgment (such as audit, remuneration, or related-party transaction matters). Retired executives and external auditors are not independent and should not be a part of the compensation committee.

Corporate Governance and ESG: An Introduction
LOS f
Section 5.2

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

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

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

A 2, 3, and 4.

B 1, 3, and 4.

C 1 and 2.

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

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

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

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

Capital Budgeting
LOS c, d
Section 3, 4.1

79 If Investor A has a lower risk aversion coefficient than Investor B, will Investor B's optimal portfolio *most likely* have a higher expected return on the capital allocation line?

A No, because Investor B has a lower risk tolerance

B No, because Investor B has a higher risk tolerance

C Yes

A is correct. Investor B has a higher risk aversion coefficient, which means a lower risk tolerance and a lower expected return on the capital allocation line.

B is incorrect. Investor B has a higher risk aversion coefficient, which means a lower risk tolerance and a lower expected return on the capital allocation line.

C is incorrect. Investor B has a higher risk aversion coefficient, which means a lower risk tolerance and a lower expected return on the capital allocation line.

Portfolio Risk and Return: Part I
LOS d
Section 3.3

80 Which of the following institutional investors is *most likely* to have a low tolerance for investment risk and relatively high liquidity needs?

A Insurance company

B Defined-benefit pension plan

C Charitable foundation

A is correct. Insurance companies need to be relatively conservative and liquid, given the necessity of paying claims when due.

B is incorrect because defined-benefit pension plans tend to have quite high risk tolerances and quite low liquidity needs.

C is incorrect because endowments/foundations typically have high risk tolerances and quite low liquidity needs.

Portfolio Management: An Overview
LOS b
Section 3

81 An analyst uses a multi-factor model to estimate the expected returns of various securities. The model analyzes historical and cross-sectional return data to identify factors that explain the variance or covariance in the securities' observed returns. This model is *most likely* a:

A statistical factor model.

B macroeconomic factor model.

C fundamental factor model.

A is correct. Statistical factor models use historical and cross-sectional return data to identify factors that explain the variance or covariance in the observed returns of securities.

B is incorrect because macroeconomic factor models use economic factors that are correlated with security returns, such as economic growth, the interest rate, the inflation rate, productivity, etc.

C is incorrect because fundamental factor models use the relationships between security returns and firms' underlying fundamentals, such as earnings, earnings growth, cash flow generation, investment in research, etc.

Portfolio Risk and Return: Part II
LOS d
Section 3.2.1

82 The slope of the security market line (SML) represents the portion of an asset's expected return attributable to:

A diversifiable risk.

B market risk.

C total risk.

B is correct. The slope of the SML is the market risk premium, $E(Rm) - Rf$. It represents the return of the market minus the return of a risk-free asset. Thus, the slope represents the portion of expected return that reflects compensation for market or systematic risk.

A is incorrect. Diversifiable risk is the unique risk related to any security and, as such, is a component of total risk.

C is incorrect. Total risk is equal to market (systematic) risk and unsystematic (diversifiable) risk.

Portfolio Risk and Return: Part II
LOS f
Section 4.2

83 With respect to the portfolio management process, asset allocation decisions are *most likely* made in the:

A execution step.

B planning step.

C feedback step.

A is correct. Asset allocation decisions are made in the execution step.

B is incorrect. Asset allocation decisions are not made in the planning step.

C is incorrect. Asset allocation decisions are not made in the feedback step.

Portfolio Management: An Overview
LOS d
Section 4

84 A factor that *most likely* measures a client's ability to bear risk is his or her:

A time horizon.

B inclination to independent thinking.

C personality type.

A is correct. A longer time horizon tends to imply greater ability to take risk.

B is incorrect. Inclination to independent thinking gives an indication about the willingness of a client to bear risk.

C is incorrect. Personality type gives an indication about the willingness of a client to bear risk.

Basics of Portfolio Planning and Construction
LOS d
Section 2.2.1

85 An optimal risky portfolio has an expected return of 15% and standard deviation of 20%. The risk-free rate is currently 5%. A risk-seeking investor who is considering investing along the capital allocation line (CAL) would *most likely*:

A borrow 25% of her wealth at the risk-free rate and invest 125% in the optimal risky portfolio.

B invest 100% of her wealth in the optimal risky portfolio.

C lend 100% of her wealth at the risk-free rate.

A is correct. Risk-seeking investors, which are those who are willing to take higher risks for a higher expected return, will invest more than 100% in the optimal risky portfolio by borrowing at the risk-free rate. This portfolio lies to the right point of the optimal risky portfolio on the CAL.

B is incorrect because it has lower risks than borrowing and investing more than 100% to the optimal risky portfolio.

C is incorrect because the investor who invests only to the risk-free assets has the lowest risk appetite.

Portfolio Risk and Return: Part I
LOS h
Section 5.4.1

86 Which of the following pairs of risks are *most closely* related?

A Model risk and tail risk

B Liquidity risk and operational risk

C Credit risk and solvency risk

A is correct. Model risk is the risk of using the wrong model to analyze an investment or the risk of using the right model for the analysis but using it incorrectly. Tail risk, although it involves unlikely but substantial losses, typically results from using inappropriate modeling assumptions such as assuming that returns are normally distributed. Credit risk involves the risk of a borrower not repaying you, whereas solvency risk is the risk of you running out of the money needed to pay your obligations. Liquidity risk is the risk that the future transaction price for an investment will be different than expected, whereas operational risk includes a wide range of potential problems occurring within an organization's personnel and systems.

B is incorrect because liquidity risk is the risk that the future transaction price for an investment will be different than expected, whereas operational risk includes a wide range of potential problems occurring within an organization's personnel and systems.

C is incorrect because credit risk involves the risk of a borrower not repaying you, whereas solvency risk is the risk of you running out of the money needed to pay your obligations.

Risk Management: An Introduction
LOS f
Section 4

87 Which of the following financial intermediaries is *most likely* to provide liquidity service to its clients?

A Brokers

B Dealers

C Exchanges

B is correct. The service that dealers provide is liquidity. Liquidity is the ability to buy or sell with low transaction costs when investors want to trade. By allowing their clients to trade when they want to trade, dealers provide liquidity to them.

A is incorrect. Brokers are agents who fill orders for their clients. They do not trade with their clients.

C is incorrect. Exchanges provide places where traders and dealers can meet to arrange their trades.

Market Organization and Structure
LOS d
Sections 4.1, 4.2

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

- **A** Put option buy market order with a strike price of $25
- **B** GTC, stop $25, limit $25 sell order
- **C** GTC, stop $25, market sell order

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

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

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

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

89 Compared with its market-value-weighted counterpart, a fundamental-weighted index is *least likely* to have a:

- **A** momentum effect.
- **B** contrarian effect.
- **C** value tilt.

A is correct. The momentum effect is a characteristic of a market-capitalization-weighted index, not a fundamental index.

B is incorrect. The fundamental indexes generally have a contrarian effect in that the portfolio weights will shift away from securities that have increased in relative value whenever the portfolio is rebalanced.

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C is incorrect. Fundamental weighting leads to a value tilt because the ratios of book value, earnings, dividends, etc., to market value of the firms in a fundamental index tend to be larger than those of the firms in its market-capitalization-weighted counterpart.

Security Market Indexes
LOS d
Section 3.2.4

90 Which of the following is *least likely* to be directly reflected in the returns on a commodity index?

- **A** Changes in the futures prices of commodities in the index
- **B** Changes in the spot prices of underlying commodities
- **C** Roll yield

B is correct. Commodity index returns reflect the changes in future prices and the roll yield. Changes in the underlying commodity spot prices are not reflected in a commodity index.

A is incorrect. Changes in the futures prices of commodities in the index are reflected in the index.

C is incorrect. The roll yield is reflected in the returns on a commodity index.

Security Market Indexes
LOS j
Section 7.1

91 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

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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.

$$V = \frac{2(1.25)}{1.12} + \frac{2(1.25)^2}{1.12^2} + \frac{2(1.25)^3}{1.12^3} + \frac{\dfrac{2(1.25)^3(1.05)}{(0.12 - 0.05)}}{1.12^3}$$
$$= \$2.23 + \$2.49 + \$2.78 + \$41.70 = \$49.20$$

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

92 An investor gathers the following data to estimate the intrinsic value of a company's stock using the justified forward price-to-earnings ratio (P/E) approach.

Next year's earnings per share	$3.00
Return on equity	12.5%
Dividend payout ratio	60%
Required return on shares	10%

The intrinsic value per share is *closest* to:

A $36.

B $48.

C $72.

A is correct. Given that the intrinsic value is $P_0 = P_0/E_1 \times E_1$ and the justified forward P/E is $P_0/E_1 = p/(r - g)$, where p = payout ratio,

Dividend growth rate = (1 – Payout ratio) × ROE = (1 – 0.6) × 12.5 = 5%

Justified forward P/E = P_0/E_1 = 0.60/(0.10 – 0.05) = 12×, so

Intrinsic value = 12 × $3 = $36

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B is incorrect. It switches between retention ratio and payout ratio in computations.

Dividend growth rate = $0.6 \times 12.5 = 7.5\%$

$P/E_1 = 0.40/(0.10 - 0.075) = 16\times$

Intrinsic value = Next year's EPS $\times P/E_1 = \$3 \times 16 = \$48$

C is incorrect. It is the mistake of using payout ratio for computing growth rate.

Dividend growth rate = Payout ratio × ROE = $0.6 \times 12.5 = 7.5\%$

$P/E_1 = p/(r - g) = 0.60/(0.10 - 0.075) = 24\times$

Intrinsic value = Next year's EPS $\times P/E_1 = \$3 \times 24 = \$72$

Equity Valuation: Concepts and Basic Tools
LOS j
Section 5.1

93 Which of the following statements concerning different valuation approaches is *most* accurate?

A One advantage of the three-stage dividend discount model (DDM) model is that it is equally appropriate to young companies entering the growth phase and those entering the maturity phase.

B It is advantageous to use asset-based valuation approaches rather than forward-looking cash flow models in the case of companies that have significant intangibles.

C The justified forward price-to-earnings ratio (P/E) approach offers the advantage of incorporating fundamentals and presenting intrinsic value estimations.

C is correct. The justified forward P/E approach offers the advantage of incorporating fundamentals and presenting intrinsic value estimations.

A is incorrect. The three-stage DDM model is appropriate to young companies entering the growth phase but not those entering the maturity phase. For such companies, the two-stage DDM model is appropriate.

B is incorrect. In the case of companies that carry significant intangibles, the use of forward looking cash flow models is more advantageous than the asset-based valuation models.

Equity Valuation: Concepts and Basic Tools
LOS m
Sections 4.3, 5.1, 6

94 When constructing a list of peer companies to be used in equity valuation, which of the following would *least likely* improve the group? Companies in the same peer group should ideally:

A be exposed to similar stages in the business cycle.

B have similar valuations.

C have the effects of finance subsidiaries minimized.

B is correct. Companies in the same peer group can have different valuations depending on structure and competitiveness.

A is incorrect. Valuations may be of limited value when comparing companies that are exposed to different stages of the business cycle.

C is incorrect. To make a meaningful comparison of companies, analysts should make adjustments to the financial statements to lessen the impact that the finance subsidiaries have on the various financial metrics being compared.

Introduction to Industry and Company Analysis
LOS d
Section 4.4

95 The type of voting in board elections that is most beneficial to shareholders with a small number of shares is *best* described as:

A statutory voting.

B cumulative voting.

C voting by proxy.

B is correct. Cumulative voting allows shareholders to direct their total voting rights to specific candidates, as opposed to having to allocate their voting rights evenly among all candidates. Thus, applying all of the votes to one candidate provides the opportunity for a higher level of representation on the board than would be allowed under statutory voting.

A is incorrect. In statutory voting, votes cannot be cast on a cumulative basis thereby making it disadvantageous to investors with small number of shares to elect their preferred candidate(s) to the board.

C is incorrect. Voting by proxy allows a designated party—such as another shareholder, a shareholder representative, or management—to vote on the shareholders' behalf. By itself it does not provide a benefit to small investors in board elections.

Overview of Equity Securities
LOS b
Section 3.1

96 Companies pursuing cost leadership will *most likely*:

A invest in productivity-improving capital equipment.

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

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

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

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

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

Introduction to Industry and Company Analysis
LOS k
Section 6

97 Which of the following is *least likely* a primary reason a company would raise capital through the issuance of equity securities? To:

A finance the purchase of long-lived assets

B maximize the wealth of shareholders

C directly satisfy stock compensation plans

C is correct. In general, a company will utilize share buybacks to satisfy stock compensation plans.

A is incorrect. In most cases, the capital that is raised is used to finance the purchase of long-lived assets, capital expansion projects, research and development, the entry into new product or geographic regions, and the acquisition of other companies.

B is incorrect. The primary goal of raising capital is to finance the company's revenue generating activities in order to increase its net income and maximize the wealth of its shareholders.

Overview of Equity Securities
LOS f
Section 7

98 The value effect market-pricing anomaly *most likely* occurs when stocks that have below-average price-to-earnings and market-to-book ratios, as well as above-average dividend yields, consistently outperform:

A large-cap stocks.

B growth stocks.

C stocks that have had negative earnings surprises.

B is correct. The value effect occurs when value stocks, which are generally referred to as stocks that have below-average price-to-earnings and market-to-book ratios, as well as above-average dividend yields, outperform growth stocks consistently and for long periods.

A is incorrect. It is the size effect, not the value effect, that compares returns with respect to large-cap stocks.

C is incorrect. Value effect does not compare stocks on the basis of earnings surprises. It is the "earnings surprise" anomaly that compares companies on the basis of the unexpected part of the earnings announcement.

Market Efficiency
LOS f
Section 4.2.2

99 Using the following US Treasury spot rates, the arbitrage-free value of a two-year $100 par value Treasury bond with a 6% coupon rate is *closest* to:

Period	**Years**	**Spot Rate**
1	0.5	1.60%
2	1.0	2.20%
3	1.5	2.70%
4	2.0	3.10%

A $107.03.

B $105.65.

C $99.75.

B is correct. The value of the bond is

$$\frac{3}{(1+0.0160/2)^{1}}+\frac{3}{(1+0.0220/2)^{2}}+\frac{3}{(1+0.0270/2)^{3}}+\frac{103}{(1+0.0310/2)^{4}}=105.65$$

A is incorrect because it treats the spot rates as forward rates.

C is incorrect because it does not divide the annual spot rates by two in the calculation.

Introduction to Fixed-Income Valuation
LOS g
Section 4

100 Which of the following is *least likely* to be a type of embedded option in a bond issue granted to bondholders? The right to:

A put the issue.

B convert the issue.

C call the issue.

C is correct. The right to call an issue is a type of embedded option granted to issuers, not bondholders. The other two rights are embedded options granted to bondholders.

A is incorrect because this is a type of embedded option granted to bondholders.

B is incorrect because this is a type of embedded option granted to bondholders.

Fixed-Income Securities: Defining Elements
LOS f
Section 5.1

101 In a securitization structure, credit tranching allows investors to choose between:

A subordinated bonds and senior bonds.

B extension risk and contraction risk.

C partially amortizing loans and fully amortizing loans.

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A is correct. Credit tranching allows investors to choose between subordinate and senior bond classes as a means of credit enhancement. The purpose of this structure is to redistribute the credit risk associated with the collateral.

B is incorrect because extension and contraction risks refer to the types of prepayment risks in a securitization structure.

C is incorrect because partially and fully amortizing loans refer to two ways in which the loan principal can be repaid.

Introduction to Asset-Backed Securities
LOS b
Section 3.3

102 A portfolio manager holds the following three bonds, which are option-free and have the indicated durations.

Bond	Par Value Owned	Market Value Owned	Duration
A	\$8,000,000	\$12,000,000	3
B	\$8,000,000	\$6,000,000	7
C	\$4,000,000	\$6,000,000	6

The portfolio's duration is *closest* to:

A 4.75.

B 5.20.

C 5.33.

A is correct. The portfolio's duration is a weighted average of the durations of the individual holdings, computed as: $(12/24) \times (3.0) + (6/24) \times (7.0) + (6/24) \times (6.0) = 4.75$.

B is incorrect because the portfolio's duration is computed using the par values owned, as follows: $(8/20) \times (3.0) + (8/20) \times (7.0) + (4/20) \times (6.0) = 5.20$.

C is incorrect because the portfolio's duration is computed as a simple average of the three durations, as follows: $(3.0 + 7.0 + 6.0)/3 = 5.33$.

Understanding Fixed-Income Risk and Return
LOS f
Section 3.4

103 The Macaulay duration of a non-callable perpetual bond with a yield in perpetuity of 8% is *closest* to:

A 7.4.

B 8.0.

C 13.5.

C is correct. The Macaulay duration of a non-callable perpetual bond is:

$$\begin{aligned} \text{MacDur} &= (1 + r)/r \\ &= 1.08/0.08 = 13.5 \end{aligned}$$

A is incorrect because it is computed as: $r/(1 + r) = 8/1.08 = 7.41$.
B is incorrect because it is just the given market yield.

Understanding Fixed-Income Risk and Return
LOS b
Section 3.3

104 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

105 Eldora Ltd. recently issued deferred-coupon bonds for which no coupon payments will be paid in the first two years of the bond's life. Regular annual coupon payments at a rate of 9% will then be made until the bonds mature at the end of six years. The spot rates for various maturities are given in the following table.

Time to Maturity	**Spot Rate**
1 year	8.0%
2 years	7.5%
3 years	7.0%
4 years	6.5%
5 years	6.0%
6 years	5.5%

On the basis of these spot rates, the price of the bond today is *closest* to:

A 100.12.

B 108.20.

C 116.24.

A is correct. The bond price is computed as

$$P_0 = 9/(1.070)^3 + 9/(1.065)^4 + 9/(1.060)^5 + (9 + 100)/(1.055)^6 = 100.12$$

B is incorrect because the price is computed assuming that the coupons are paid over years 1 through 4 and the par value is paid in year four, as follows:

$$P_0 = 9/(1.080)^1 + 9/(1.075)^2 + 9/(1.070)^3 + (9 + 100)/(1.065)^4 = 108.196$$

C is incorrect because the price is computed assuming that the coupons are paid over years 1 through 6 and the par value is paid at maturity in year six, as follows:

$$P_0 = 9/(1.080)^1 + 9/(1.075)^2 + \ldots + (9 + 100)/(1.055)^6 = 116.241$$

Introduction to Fixed-Income Valuation
LOS c
Section 2.4

106 Which of the following factors will *most likely* drive the repo margin lower?

A Lower quality of the collateral

B Shorter supply of the collateral

C Lower credit quality of the counterparty

B is correct. If the collateral is in short supply or if there is a high demand for it, repo margins are lower. Repo margin is the difference between the market value of the security used as collateral and the value of the loan.

A is incorrect because the lower the quality of the collateral, the higher the repo margin.

C is incorrect because the lower the creditworthiness of the counterparty, the higher the repo margin.

Fixed-Income Markets: Issuance, Trading, and Funding
LOS i
Section 7.3.2

107 Using the following information and assuming coupons are paid annually, the G-spread of the Steel Co. bond is *closest* to:

Bond	**Maturity**	**Coupon**	**Price**
Steel Co.	2 Years	5.00%	101.70
Treasury bond	2 Years	4.00%	100.50

A 36 bps.

B 94 bps.

C 100 bps.

A is correct. The yield for the Steel Co. bond is calculated as

$$\frac{5}{(1+r)} + \frac{5+100}{(1+r)^2} = 101.70$$

$$r = 4.0974\%$$

The yield for the Treasury bond is calculated as

$$\frac{4}{(1+r)} + \frac{4+100}{(1+r)^2} = 100.50$$

$$r = 3.7359\%$$

G-spread is calculated as the yield difference between the Steel Co. Bond and the Treasury bond: 4.0974% – 3.7359% = 36.15%, or 36 bps.

B is incorrect because it is calculated as current yield difference: (5/101.70) – (4/100.50) = 4.9164% – 3.9801% = 0.9363%, i.e., 94 bps.

C is incorrect because it is calculated as coupon rate difference: 5% – 4% = 1%.

Introduction to Fixed-Income Valuation
LOS i
Section 5.1

108 Which of the following *most likely* has the highest priority claim in the event of default?

A Unsecured debt

B Subordinated debt

C Secured debt

C is correct. Secured debt is backed by assets or financial guarantees pledged to ensure repayment in the event of default. Therefore, secured debt has a priority claim over unsecured debt and subordinated debt.

A is incorrect because unsecured debt is paid after secured debt in the event of default.

B is incorrect because subordinated debt is a form of unsecured debt and it is paid after secured debt in the event of default.

Fixed-Income Securities: Defining Elements
LOS b
Section 3.1.3.1

109 AMK Corp. purchased US government bonds through the Bloomberg fixed-income electronic trading platform. This transaction is *most likely* known as:

A exchange traded.

B private placement.

C over-the-counter.

C is correct. In the over-the-counter market, buy and sell orders initiated from various locations are matched through a communication network, such as the Bloomberg fixed-income electronic trading platform.

A is incorrect because exchanged-traded deals are transacted through the exchange according to the rules imposed by the exchange.

B is incorrect because private placement is a form of primary markets instead of secondary markets for bonds.

Fixed-Income Markets: Issuance, Trading, and Funding
LOS d
Section 3.2

110 During the lockout period for a non-amortizing asset-backed security, the principal payment of €100 million on a €1 billion face value issue will result in the security having a total face value of:

A €0.9 billion.

B €1.1 billion.

C €1.0 billion.

C is correct. During the lockout period any principal received is reinvested to acquire additional loans with a principal equal to the total principal received from the cash flow keeping the face value of the issue at €1 billion.

A is incorrect because principal received during the lockout period is reinvested in additional loans, and not used to pay down the outstanding issuance.

B is incorrect because the payment of €100 million would not result in an increase in the face value of the issuance, regardless of whether the issue was inside or outside of the lockout period.

Introduction to Asset-Backed Securities
LOS h
Section 7

111 A swap in which the investor receives a variable payment in line with market conditions and makes a fixed payment can *best* be replicated by purchasing a:

A set of long futures contracts which are matched with short forward contracts.

B series of forward contracts, each with an initial value of zero.

C floating rate bond financed using a fixed-rate bond.

C is correct. The payment structure is replicated by being long the floating rate bond and being short the fixed-rate bond.

A is incorrect. This strategy does not replicate a swap in which the investor receives a variable payment in line with market conditions and makes a fixed payment.

B is incorrect. Due to differences in timing, the forward contracts need to be off-market contracts.

Basics of Derivative Pricing and Valuation
LOS a
Section 3.3

112 During its life, the value of a forward contract is *most likely* equal to the price of the underlying minus the price of the:

A forward.

B forward, discounted over the original term of the contract.

C forward, discounted over the remaining term of the contract.

C is correct. The value of a forward contract is the spot price of the underlying minus the present value of the forward contract. Calculating the present value requires adjusting the time period to account for the remaining term of the contract.

A is incorrect. This is only true at expiration.

B is incorrect. This is only true at initiation.

Basics of Derivative Pricing and Valuation
LOS c
Section 3.1.3

113 Which of the following statements *best* describes a feature of an American option? Early exercise of an American:

A put option is optimal only if the underlying is dividend paying.

B call option is never optimal if the underlying is dividend paying.

C put option that is deep in the money may be optimal.

C is correct. For a deep-in-the-money put option, early exercise may be optimal because the additional upside is limited.

A is incorrect. The fact that the underlying is dividend paying does not justify early exercise in the case of a put option.

B is incorrect. Early exercise of a call option may be beneficial if a sufficiently high dividend can be captured.

Basics of Derivative Pricing and Valuation
LOS o
Section 4.3

114 In a currency swap, the underlying principal amount is exchanged:

A only at the start of the swap.
B only at the end of the swap.
C both at the start and at the end of the swap.

C is correct. In a currency swap, the underlying principal is denominated in different currencies and is typically exchanged at the start and end of the swap.

A is incorrect. In a currency swap, the underlying principal is denominated in different currencies and would typically be exchanged not only at the start of the swap but also at the end of the swap.

B is incorrect. In a currency swap, the underlying principal is denominated in different currencies and would typically be exchanged not just at the end of the swap but at the start of the swap as well.

Derivative Markets and Instruments
LOS c
Section 4.1.3

115 All, else held equal, the value of a European call option is *best* characterized as having a:

A negative relationship with the price of the underlying.
B negative relationship with the volatility of the underlying.
C positive relationship with the time to expiration.

C is correct. The value of a European call option is directly related to the time to expiration. That is, all else held equal, the value of a European call option is higher the longer the time to expiration.

A is incorrect. The value of a European call option is directly related to the price of the underlying.

B is incorrect. The value of a European call option is directly related to the volatility of the underlying.

Basics of Derivative Pricing and Valuation
LOS k
Section 4.1.4

116 The real estate index *most likely* to suffer from sample selection bias is a(n):

A repeat sales index.
B REIT index.
C appraisal index.

A is correct. Only properties that sell in each period and are included in the index and vary over time which may not be representative of the whole market.

B is incorrect. The REIT index is based on a set of publicly traded REITs and thus does not suffer from sample selection bias.

C is incorrect. The appraisal index is based on a set of properties that is appraised regularly. Thus it does not suffer from sample selection bias.

Introduction to Alternative Investments
LOS e
Section 5.3

117 The following information is available about a hedge fund:

Initial fund assets	$100 million
Fund assets at the end of the period (before fees)	$110 million
Management fee based on assets under management	2%
Incentive fee based on the return	20%
Soft hurdle rate	8%

No deposits to the fund or withdrawals from the fund occurred during the year. Management fees are calculated using end-of-period valuation. Management fees and incentive fees are calculated independently. The net-of-fees return of the investor is *closest* to:

A 7.8%.
B 7.4%.
C 5.8%.

C is correct. The soft hurdle rate is surpassed because the return of the fund is 10%. For that reason, the full fee, based on the full performance, is due.

Management fee: 2% of $110 million = $2.2 million

Incentive fee: 20% of $10 million = $2 million

Total fees: $4.2 million

Therefore, the fund assets at the end of the period after fees are $105.8 million. The return for the investor is 5.8%.

A is incorrect. It completely neglects the incentive fee. This is only appropriate if the hurdle rate is not cleared. Management fee: 2% of $110 million = $2.2 million. Therefore, the fund assets at the end of the period after fees are $107.8 million. The return for the investor is 7.8%.

B is incorrect. It reduces the base of the incentive fee by the hurdle rate. This is only correct in the case of a hard hurdle rate, but not in the case of a soft hurdle rate. Management fee: 2% of $110 million = $2.2 million.

Incorrect subtraction of $8 million (because of the hurdle rate) from the performance of $10 million leaves $2 million.

Incentive fee 20% of $2 million = $0.4 million

Total fees: $2.6 million

Therefore, the fund assets at the end of the period after fees are $107.4 million. The return for the investor is 7.4%.

Introduction to Alternative Investments
LOS f
Section 3.3

118 Relative to traditional investments, alternative investments are *best* characterized as having:

A higher correlations with other asset classes.

B unique legal and tax considerations.

C greater liquidity.

B is correct. Alternative investments are more likely characterized as having unique legal and tax considerations because of the broad range and complexity of the investments.

A is incorrect because alternative investments typically have lower correlations with traditional investments, such as stocks, bonds, and cash.

C is incorrect because alternative investments typically have underlying investments that are illiquid.

Introduction to Alternative Investments
LOS a
Section 2

119 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

120 Which of the following is *most likely* a private real estate investment vehicle?

- **A** Real estate limited partnership
- **B** Real estate investment trust
- **C** Collateralized mortgage obligation

A is correct. Real estate limited partnerships are a form of private real estate investment.

B is incorrect. Real estate investment trusts are a form of public real estate investment.

C is incorrect. Collateralized mortgage obligations are a form of public real estate investment.

Introduction to Alternative Investments
LOS d
Section 5.1