2015 Level III Mock Exam
ANSWERS AND REFERENCES

Kim Case Scenario

Sue Kim, CFA, is a hedge fund manager who specializes in biotechnology stocks. She has spent many years investing in biotech companies and formerly worked as an equity portfolio manager for a large bank with substantial research capabilities. Two years ago, Kim started a hedge fund, Green Note Investments. She also manages accounts for several wealthy individuals.

Now that she no longer has the bank's resources to support her research, Kim relies on a network of experts to help her search for profitable investment opportunities in the biotechnology area. These experts include legal, business, and political contacts.

Kim purchases information from several biotechnology company employees, none of whom are officers of their respective companies, who perform work outside their regular positions as biotechnology consultants or experts. These consultants work with Kim without the knowledge of their employers, none of which has a prohibition on outside employment, and provide her with information about quarterly earnings and other confidential data related to their companies' performance. Kim bases final investment decisions on this information and encourages the consultants and experts she works with to publicly disclose the information that has been passed on to her.

To spread the news about the positive returns Green Note has achieved, Kim hires a public relations consultant, Takehiko Akagi, CFA. Akagi tells Kim that for a marketing campaign to be effective, she needs a five-year return history. Kim tries to retrieve her performance history from the bank but is denied this request. Searching her home laptop computer, Kim finds her historical bank performance data. She uses the bank data to recreate the oldest two years of the requested five-year performance history. For the third year, she simulates her investment performance by applying Green Note's current investment strategy to historical data, which she discloses in a footnote along with information about whether the performance is gross or net of fees. For the two most recent years, Kim uses Green Note's actual performance history.

Because the marketing campaign takes longer than expected to accomplish its goal of bringing new clients to the fund, Kim asks Akagi to accept a revised fee arrangement. Instead of paying Akagi a monthly fee of $10,000 to market the fund, Kim proposes an investment management fee-sharing arrangement. For each client Akagi brings to Kim and whom she signs on as an investor in Green Note, Kim will pay Akagi a fee of 10% of the investment management fee she charges that client for their first 24 months in the fund. Akagi agrees to this arrangement, and Kim makes sure to disclose it to prospective clients by verbally telling them that Green Note compensates Akagi for his efforts to find investors for the fund, which is the first time clients are made aware of this arrangement. Akagi also discloses to each client the fee he expects to earn from this arrangement once an investment management agreement is signed.

Kim's former university roommate, Donna Miriam, is now a legal expert in mergers and acquisitions. Miriam has a number of connections to senior associates who specialize in this area of law at large, well-known law firms. She updates Kim when she hears a deal is about to be completed. Kim uses this information as part of a mosaic of information she gathers from her own research and information from other experts in her network. After Kim has determined Miriam's information is likely to be correct, Kim trades derivative securities of the acquisition target. In the past 18 months, her merger and acquisition investments have resulted in profits of $10 million for the hedge fund. Kim also manages a separate account for Miriam, who has authorized Kim to replicate the trades in the acquisition targets for her account. Because Miriam provides this valuable information, Kim makes sure she trades Miriam's account before any other client trades.

Julian Huang, a government lobbyist, is another key member of Kim's expert network. Huang keeps in constant contact with the many lobbyists involved in biotechnology issues and has close relationships with many legislators. Recently, legislators proposed restricting biotechnology research. If the legislation had passed, it would have reduced valuations across the board for biotech stocks. Kim led the hedge fund industry's efforts to successfully fight this change. She personally donated a large sum of money to support these efforts and raised funds from the hedge fund community to fight this proposed legislation.

Kim's efforts to grow her fund result in new clients and rapid growth of assets under management. To bring specialized experience to her investment decision-making process, Kim uses her standardized criteria for adviser selection to hire several competent outside advisers to sit on her investment committee,. Kim also subscribes to several well-known third-party research vendors, which she had not considered previously because of their high charges. With increased fees earned from additional assets under management, she can now afford to request from these vendors information tailored to her specific needs. Because this research is so specialized and detailed, and because Kim is confident the outside advisers use diligence and a reasonable basis in their research, she is able to use the reports, with a few minor changes, as her own. Kim shows her new research reports to all of her clients but makes no mention of any other changes to her investment process.

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1. By executing trades based on the information she receives from the biotechnology consultant employees, Kim *least likely* violates the CFA Institute Standards of Professional Conduct concerning:

   A. Diligence and Reasonable Basis.
   B. Material Nonpublic Information.
   C. Market Manipulation.

   Answer = C

The hedge fund manager's trades do not represent a violation of Standard II(B)–Market Manipulation. Kim is not engaging in practices that distort prices or artificially inflate trading volume with the intent to mislead market participants. Because the trades are based on material nonpublic information, however, Kim is in violation of Standard II(A)–Material Nonpublic Information. Kim is also in violation of Standard V(A)–Diligence and Reasonable Basis because she has based her investment decisions on information received from third parties. In addition, Kim has not determined whether this information is sound and whether the processes and procedures used by those responsible for the research were valid.

CFA Level III
"Guidance for Standards I–VII"
Vol. 1, Standard II(A)–Material Nonpublic Information, Standard II(B)–Market Manipulation, Standard V(A)–Diligence and Reasonable Basis

2. With regard to Green Note's five-year investment performance history, Kim is *inconsistent* with the CFA Institute Standards of Professional Conduct concerning which of the following?

A. Performance as a hedge fund manager
B. Simulated performance of current strategy
C. Performance when she was an equity portfolio manager

Answer = C

Showing past performance of funds managed at a prior firm as part of a performance track record is permissible under Standard III(D)–Performance Presentation only as long as showing that record is accompanied by appropriate disclosures about where the performance took place and the person's specific role in achieving that performance, which Kim did not do. In addition, the material used to create this performance record is the property of Kim's former employer, so to use this record, she should have obtained permission to do so but did not as required by Standard IV(A)–Loyalty.

CFA Level III
"Guidance for Standards I–VII"
Vol. 1, Standard III(D)–Performance Presentation, Standard IV(A)–Loyalty

3. With regard to Kim's fee arrangements with Akagi, whose actions are *inconsistent* with the CFA Institute Standards of Professional Conduct?

A. Akagi's
B. Both Kim and Akagi's
C. Kim's

Answer = B

Disclosure that fully explains the referral fee arrangement has not been properly provided, in violation of Standard VI (C)–Referral Fees. Akagi is required to disclose in writing, and prior to the execution of any agreement, referral fee agreements, including the nature and the value of the benefit. Kim is in violation of Standard IV (C)–Responsibilities of Supervisors because she has a responsibility to oversee Akagi and ensure that the appropriate disclosures are made concerning referral fees. In addition, Kim verbally telling clients that Green Note compensates Akagi for his efforts to find investors for the fund is insufficient to meet the disclosure requirements. She must disclose the compensation agreement in writing.

CFA Level III
“Guidance for Standards I–VII”
Vol. 1, Standard IV(C)–Responsibilities of Supervisors, Standard VI(C)–Referral Fees

4. Kim's relationship with Miriam is consistent with the CFA Institute Standards of Professional Conduct concerning:

A. Priority of Transaction.
B. Fair Dealing.
C. Material Nonpublic Information.

Answer = A

Standard VI(B)–Priority of Transactions concerns investment transactions for clients and employers having priority over investment transactions in which a member or candidate is the beneficial owner. Because Kim does not have beneficial ownership in securities traded in client accounts, this standard has not been violated. By purchasing shares for Miriam's account before other client accounts, Kim has violated Standard III(B)–Fair Dealing, which requires members and candidates to treat all clients fairly when taking investment action with regard to general purchases. In addition, because Kim's trades are based on material nonpublic information, they are in violation of Standard II(A)–Material Nonpublic Information. The mosaic theory is not applicable here because Kim used it as a way to hide her receipt of material nonpublic information.

CFA Level III
"Guidance for Standards I–VII"
Standard II(A)–Material Nonpublic Information, Standard III(B)–Fair Dealing, Standard VI(B)–Priority of Transactions

5. With regard to biotechnology legislation lobbying, are Kim's actions consistent with the CFA Institute Standards of Professional Conduct?

   A. No, because of her efforts to influence the legislation
   B. Yes
   C. No, because she donated her own funds to influence the legislation

   Answer = B

   Kim has not violated Standards of Professional Conduct and Standard I (A)–Knowledge of the Law. Her efforts to influence the legislative process, including her personal donations, are legal and do not violate any standards because there is no indication that either her efforts or her contributions are illegal.

   CFA Level III
   "Guidance for Standards I–VII"
   Standard I(A)–Knowledge of the Law

6. Which of Kim's changes made as a result of having more assets under management is consistent with the CFA Institute Standards of Professional Conduct?

   A. Use of an outside adviser
   B. Client communications
   C. Her new research reports

   Answer = A

   Standard V(A)–Diligence and a Reasonable Basis requires members and candidates to ensure that their firms have standardized criteria for reviewing external advisers, which Kim has done. Kim is in violation of Standard V(B)–Communication with Clients and Prospective Clients because she has not communicated the changes in her investment process to clients. By presenting the third-party research as her own, Kim has also violated Standard I(C)–Misrepresentation.

   CFA Level III
   "Guidance for Standards I–VII"

Standard I(C)–Misrepresentation, Standard V(A)–Diligence and a Reasonable Basis, Standard V (B)–Communication with Clients and Prospective Clients

Omar Case Scenario

Ashraf Omar, CFA, recently joined the Sahara Manufacturing Company (Sahara) as its chief financial officer (CFO). The company is planning an initial public offering (IPO). The proceeds of the IPO will be used to finance the purchase of plant and machinery. Omar was recruited on the basis of his extensive investment banking background, having successfully supervised 10 IPOs over the last five years at Falcon Investment Bank.

Sahara, a family-owned company, had a very good reputation until recently when an ongoing tax dispute became public. The dispute may lead the tax authority to impound plant assets. Furthermore, outdated plant equipment is causing production disruption and declining profit margins. The CEO is looking to retire because he is not able to manage the current challenges.

Omar creates a detailed plan to help manage the IPO process. He plans on using an extensive checklist and numerous templates that he developed while at Falcon. Omar decides to employ the same external service providers he used at Falcon to handle the legal, accounting, and marketing aspects required for a successful IPO. He considers these external providers the best in the industry, and their fees are competitive. He will also work with his previous contacts at the regulatory authority during the approval process.

As part of the due diligence process, Omar discovers a letter from a well-known credit rating agency indicating an imminent downgrade of Sahara to below investment grade. But Omar recalls that a private placement document being used to pitch the debt issue to investors shows a pending investment-grade rating. He notes that the outstanding debt is being paid according to schedule. Omar also finds among the firm's documents court filings relating to the successful defense of a wrongful dismissal suit by a former employee fired for theft. In addition, Omar learns Sahara had been penalized previously for harmful plant emissions and warned about any reoccurrence.

In the "Investment Risk" section of the draft prospectus, Omar includes Exhibit 1.

Exhibit 1
Investment Risks

Risk	Risk Details	Possible Business Impact
Management	There is the possibility that Sahara will not find a suitable candidate to replace the retiring CEO in a timely fashion.	Any delay in finding a replacement could negatively affect Sahara's ability to implement its strategy for improving investor returns.
Corporate tax	Sahara is disputing underpayment of taxes.	Sahara may be subject to additional tax payments, penalties, and fines.
Profitability	Sahara faces declining profit margins.	New equipment may not help improve profit margins.

Knowing a third-party research firm can add value to the IPO marketing process by giving an independent opinion, Omar hires Miriam Halawi, CFA. She is a former colleague who started her own research firm two years ago. Halawi allows Omar to use her research report in all Sahara marketing material with proper acknowledgement. After extensive research, Halawi makes a long-term buy recommendation of Sahara. But she qualifies the recommendation with a high-risk rating, knowing the IPO targets retail investors along with institutional investors. Omar invites Halawi to travel across the region with him to promote the IPO. Halawi agrees but only if she is paid a flat fee.

Omar works with the marketing specialists to create an advertisement targeting retail investors to be published in newspapers across the nation. Institutional investors will be invited to an investor briefing to kick off the offer period. The final copy reads, in part, as follows:

> Invest in the Sahara Manufacturing Company to be assured of a good return. The company offers the potential for long-term growth with reasonable levels of risk. Miriam Halawi, CFA, a third-party research analyst, affirms that Sahara Manufacturing Company is a “long-term buy”!

One week prior to the IPO, Sahara’s board of directors approves and implements an employee share option plan (ESOP). Existing staff members are allocated 10% of the upcoming IPO at a 25% discount to the IPO price. Omar acquires his allocation with the intention of selling his shares at a profit after trading commences. The details of the ESOP are highlighted in the IPO prospectus.

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7. Omar's plan for the IPO *most likely* violates the CFA Institute Standards of Professional Conduct because of his intended use of:

   A. regulatory contacts.
   B. external service providers.
   C. checklists and templates.

   Answer = C

   Omar violated Standard IV(A)–Loyalty in that the checklists and templates were created while Omar was employed by Falcon. Therefore, the checklists and templates are the intellectual property of Falcon, not Omar's. If Omar wants to use the checklists and templates from his former employer, he must first seek and receive permission in writing. Otherwise, he would need to develop his own checklists and templates based on his IPO experiences.

   CFA Level III
   "Guidance for Standards I–VII"
   Standard IV(A)–Loyalty

8. To avoid violating any of the Standards of Professional Conduct, Omar should *least likely* undertake further analysis of which issues uncovered during the IPO due diligence process?

A. Employee lawsuit
B. Letter from credit rating agency
C. Plant emissions

Answer = A

Because the employee theft issue concluded, it is no longer a threat to the future operations of Sahara. But any future plant emissions could subject the company to additional fines, or worse, closure. The debt private placement document is contradictory to the actual credit rating report of the debt issue, so further investigation is needed to determine why. As a CFA charterholder, Omar has the responsibility to not misrepresent any factual information on which investors will base their investment decisions [Standard I(C)–Misrepresentation]. To do so, he must be diligent in his investment analysis and recommendations as per Standard V(A)–Diligence and Reasonable Basis. By promoting Sahara's IPO, Omar is effectively recommending Sahara shares to potential investors. Although potential investors in the IPO are not Omar's clients, he maintains the responsibility to not misrepresent the investment characteristics of the company and/or offer by undertaking thorough due diligence.

CFA Level III
"Guidance for Standards I–VII," CFA Institute
Standard I(C)–Misrepresentation, Standard V(A)–Diligence and Reasonable Basis

9. With regard to Exhibit 1, Omar *most likely* violates the Standards of Professional Conduct concerning the section on:

A. management.
B. profitability.
C. corporate tax.

Answer = C

Omar omitted the fact that the tax authorities have threatened to impound assets of the company that may cause the plant to shut down. This information would be a material omission, causing Omar to be in violation of Standard I(D)–Misconduct. Members must not engage in any professional conduct involving dishonesty, fraud, or deceit or commit any act that reflects adversely on their professional reputation, integrity, or competence.

CFA Level III
"Guidance for Standards I–VII"
Standard I(D)–Misconduct

10. To avoid violating the Standards of Professional Conduct, Halawi's *most* appropriate action with regard to the regional marketing trip is to:

A. act for the benefit of Sahara.
B. not attend any marketing trip.
C. disclose how she is compensated.

Answer = C

To avoid violating Standard I(B)–Independence and Objectivity when undertaking issuer-paid research, members and candidates must fully disclose potential conflicts of interest, including the nature of their compensation, to avoid misleading investors. The Standards of Professional Conduct do not forbid Halawi from participating in the regional marketing meetings as long as she discloses all potential and actual conflicts of interest, including her compensation package. Although CFA charterholders and candidates are required to put the interests of their clients before their own, in this case, it is pertinent to determine who the client actually is. At times, the client may be the investing public as a whole—in which case, the goals of independence and objectivity of research surpass the goal of loyalty to a single organization.

CFA Level III
"Guidance for Standards I–VII"
Standard I(B)–Independence and Objectivity

11. With regard to the IPO advertisement, Omar is *least likely* in violation of which of the Standards of Professional Conduct?

A. Misconduct
B. Plagiarism
C. Misrepresentation

Answer = B

Omar does not appear to copy from Halawi's report. However, it does appear he omitted information (the high-risk rating) from Halawi's report that would perhaps cause some investors to make a different investment decision if it had been included. Omar is in violation of Standard I(C)–Misrepresentation. Members and candidates should exercise care and diligence when incorporating third-party information. Misrepresentations resulting from the use of the research of outside parties become the responsibility of the investment professional when it affects that professional's business practice. Omar is also in violation of Standard I(C) by using "assured of a good return," implying a guaranteed return. Omar may also be in violation of Standard I(D)–Misconduct if the omission was on purpose. Members and candidates must not engage in any professional conduct involving dishonesty, fraud, or deceit or commit any act that reflects adversely on their professional reputation, integrity, or competence.

CFA Level III
"Guidance for Standards I–VII"
Standard I(C)–Misrepresentation, Standard I(D)–Misconduct

12. Does Omar's participation in the ESOP *most likely* violate any of the Standards of Professional Conduct?

A. Yes, with regard to priority of transactions
B. No
C. Yes, with regard to conflicts of stock ownership

Answer = B

By participating in the ESOP program, Omar does not violate any standards because the ESOP program is fully disclosed in the IPO prospectus. When he sells his allocation, he will need to ensure that he gives clients and the company priority in order to avoid any standards violations.

CFA Level III
"Guidance for Standards I–VII"
Standard VI(A)–Disclosure of Conflicts, Standard VI(B)–Priority of Transactions

Richards Case Scenario

Edvard Richards is president and sole owner of More Than Lumber Corporation (MTL), a privately held building materials company. Founded by the Richards family, the company has been run by Edvard Richards for over 40 years. Richards also owns investment real estate in the form of a warehouse unrelated to MTL, as well as 70,000 common shares of publicly traded Cintas (CTAS) that he inherited. He wants these two items to be considered concentrated positions.

Now 68, Richards is seeking advice on how to transition to retirement. He provides information about his holdings (Exhibit 1) to two competing financial advisers, Todd Adams and Linda Boshe:

Exhibit 1 **Richards's Values**		
Asset	**Estimated Value ($000's)**	**Cost Basis ($000's)**
Primary residence (no mortgage)	2,000	2,000
MTL Corp	11,000	2,000
Common stock (70,000 shares CTAS)	4,000	1,000
Warehouse	3,000	4,300
Municipal bond portfolio	3,000	3,150
Global All Cap Equity Fund	3,400	1,650
Cash equivalents	300	300
Tax Rates		
Capital gains tax rate = 20%	Income tax rate = 40%	

Richards asks each adviser to apply a goal-based planning framework he has read about that uses three risk buckets: personal, market, and aspirational. As a first step, he estimates his own after-tax primary capital assuming that all assets are sold today and converted into cash. He asks the two advisers to assess his after-tax primary capital under the same assumptions (all three estimates are provided in Exhibit 2).

Exhibit 2 **Estimates of After-Tax Primary Capital** **($000's)**	
Richards	11,780
Adams	8,380
Boshe	11,640

Richards wants to monetize and eliminate the concentration risk of his CTAS holding without paying taxes on capital gains and then invest the proceeds in a balanced portfolio. He notes the following comments in his discussions with the two advisers:

Richards: “My broker says he can arrange a cashless collar against CTAS or a short sale against the box. I understand that both methods will avoid incurring an immediate capital gain and both will expose me to the same level of market risk. I can borrow against the position in both cases and offset the cost of borrowing with the CTAS dividends.”

Adams: “We could help you complete a short against the box transaction. This strategy will provide a high loan-to-value (LTV) ratio and avoid counterparty risk. A total return equity swap has these same advantages. You can thus realize the economic gain on CTAS while deferring capital gains taxes.”

Boshe: “We suggest either a forward conversion with options or an equity forward sale. Either will achieve high LTV ratio monetization without incurring immediate capital gains taxes, and both methods avoid counterparty risk.”

Adams has strong connections to the real estate market and informs Richards that the market value estimate of $3 million for the warehouse is much too low. He advises Richards to consider reducing his real estate risk directly by, using the immediate cash inflows, net of tax liabilities and costs, to increase his stock and bond portfolios. Adams is confident he can arrange any of the following real estate offers:

1. Sell the warehouse for $4.8 million to an outside investor.
2. Enter into a recourse mortgage loan with the warehouse valued at $5.8 million by the lender and an LTV ratio of 80%.
3. Enter into a sale-and-leaseback, with the warehouse valued at $4.9 million and the first year’s rental payment of $150,000 payable at the start of the lease.

Boshe has strong connections to the investment banking community. Richards has authorized her to ascertain the level of interest for the sale of MTL. Boshe is confident she can arrange any of the following strategies:

MTL Strategy 1: A private equity firm can arrange to leverage MTL, paying Richards 40% of his estimated value of MTL (as shown in Exhibit 1), in cash up front and rolling the remaining 60% of the value into new shares that pay no dividends. Richards will stay on as president for five years, during which time he will help transition leadership to a new team. After five years, he will sell or monetize the remaining ownership.

MTL Strategy 2: A small but rapidly growing publicly traded building materials company is willing to acquire 100% ownership and pay Richards $7 million in cash up front and employee stock options that he can exercise after two years and that expire in five years. The public company is too small to support publicly traded stock options. Should the public company’s stock rise, Richards can exercise his employee stock options, which will be taxed as ordinary income. To protect the value of his appreciated stock while participating in further upside potential, he can purchase long-term protective put options on an industry ETF that closely tracks the building materials industry. If the public company's stock subsequently drops along with the industry, he can sell the puts.

MTL Strategy 3: Create an employee stock ownership plan (ESOP) that would borrow sufficient funds to purchase 40% of Richards' ownership. Richards would maintain upside potential in his retained shares, which could be sold at some point in the future.

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13. Using the planning framework that Richards suggests, which person's estimate for the after-tax primary capital is *most* accurate?

A. Boshe
B. Adams
C. Richards

Answer = B

Primary capital is the sum of assets that fall into the personal and market risk buckets. It includes the residence, municipal bond portfolio, global equity fund and cash equivalents. It excludes the values of MTL and the concentrated positions in CTAS public stock and the warehouse (investment real estate) – those are considered aspirational.

Asset	**Value ($000's)**	**Cost ($000's)**	**Gain= Value - Cost ($000's)**	**Tax = Gain x 0.20($000's)**	**Net Value after tax ($000's)**
Residence	2,000	2,000	0	0	2,000
Muni Bonds	3,000	3,150	(150)	-30	3,030
Global Equities	3,400	1,650	1750	350	3,050
Cash Equivalents	300	300	0	0	300
			Total Net Value =		**8,380**

Adams has the correct value.

CFA Level III
"Concentrated Single-Asset Positions," Thomas J. Boczar and Nischal R. Pai
Section 3

14. Richards's understanding about monetizing CTAS is *most* accurate with respect to:

    A. the risk exposure of both strategies.
    B. using the CTAS dividends to offset borrowing costs.
    C. avoiding immediate capital gains under both strategies.

    Answer = C

    Richards's understanding about avoiding immediate capital gains is correct. The short sale against the box approach defers capital gains. No sale of stock occurs in establishing the collar. The short against the box strategy is riskless, whereas the collar does carry risk within the range between the exercise prices of the put and the call. The dividends will continue to be paid to Richards only in the collar. The dividends will pass through to the lender of the shares that were borrowed in the short against the box strategy and are thus not available to Richards.

    CFA Level III
    "Concentrated Single-Asset Positions," Thomas J. Boczar and Nischal R. Pai
    Section 4.3

15. Which of Adams's and Boshe's comments about counterparty risk is *most* accurate? The comment made by:

    A. Adams about the short sale against the box.
    B. Boshe about her proposed strategies.
    C. Adams about the total return equity swap.

    Answer = A

    Adams's statement about the short sale against the box is correct because it creates a riskless position. Although the forward conversion with options avoids counterparty risk, the equity forward sale and the total return equity swap use a derivatives dealer and thus include counterparty risk.

    CFA Level III
    "Concentrated Single-Asset Positions," Thomas J. Boczar, and Nischal R. Pai
    Section 4.2, 4.3

16. Using the information in Exhibit 1 and Adams's real estate proposals, which offer will provide the largest immediate addition of funds to Richards's stock and bond portfolios?

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

Answer = A

Immediate cash inflows available would include proceeds and the possible first rental payment in Offer 2; all cash flows are net of taxes. As shown in the table below Offer 1, selling the warehouse outright, produces the highest immediate cash flow net of taxes:

Offer	**Offer Amount**	**Cost**	**Taxes Paid** Gains Taxes = 20%	**Loan Proceeds** LTV = 80%	**Initial Lease Payment**	**Income tax deduction on rent** Income Tax rate = 40%	**Net To Reinvest** Offer less all taxes
1	4,800,000	4,300,000	(100,000)				**4,700,000**
2	5,800,000	4,300,000	0 as no sale occurs	4,640,000			4,640,000
3	4,900,000	4,300,000	(120,000)		(150,000)	60,000	4,690,000

CFA Level III
"Concentrated Single-Asset Positions," Thomas J. Boczar, and Nischal R. Pai
Section 6

17. Which of Boshe's MTL strategies *least likely* describes a staged exit strategy? MTL Strategy:

A. 1
B. 3
C. 2

Answer = C

MTL Strategy 2 is not a staged exit strategy because it does not provide for two specific liquidity events: cash up front and a sale or monetization of the remainder of Richards’s ownership in the future. Strategies 1 and 3 are staged exit strategies that provide for two liquidity events.

CFA Level III

"Concentrated Single-Asset Positions," Thomas J. Boczar, and Nischal R. Pai
Section 5

18. Which of the following statements about Boshe's proposed exit strategies from MTL is *most* accurate? MTL strategy:

A. 3 exhibits a mismatch in character.
B. 2 exhibits cross hedging.
C. 2 provides for the possibility of yield enhancement.

Answer = B

Evidence of both cross hedging and a mismatch in character is present in MTL Strategy 2. Buying put options on the ETF is a cross hedge against the industry risk faced by the public company. The scenario outlines an exercise of employee stock options, which will be taxed as ordinary income, and an eventual profit from a put option which will be taxed as a capital gain. This difference in tax type is a mismatch in character.

CFA Level III
"Concentrated Single-Asset Positions," Thomas J. Boczar, and Nischal R. Pai
Section 4

Arbuckell Case Scenario

The Arbuckel family office was formed 10 years ago following the family's sale of its minority ownership interest in a National Football League (NFL) franchise. The family office was created to formally manage the family's investment affairs. The family's investment portfolio has traditionally consisted of money market funds, corporate bonds, publicly traded US large-cap stocks, and equity small-cap mutual funds. Glen Arbuckel, the patriarch of the family, and his daughter, Jenna Arbuckel-Davis, co-manage the family office. They are considering adding alternative investments to the portfolio. They have hired Bill Clarke of Snyder Capital Management to provide independent investment counseling.

Clarke states that alternative investments typically include real estate, private equity, commodities, hedge funds, managed futures, and distressed securities. Arbuckel's intention is to select private equity as the family's first alternative investment because he believes that private equity is similar in nature to the ownership structure of NFL teams.

Clarke also states that alternative investments create some issues for private wealth investors that are distinct from those created by traditional investments. For example, consideration of decision risk will help the investor maintain his intended time horizon throughout the life of the alternative investment. Tax issues are not necessarily more complex because current income and capital appreciation are the primary sources of return for both alternative and traditional investments. Clarke notes that determining the suitability of an alternative investment is equally complex for both private wealth investors and institutional investors.

Arbuckle-Davis mentions an interest in venture capital and asks Clarke to discuss the venture capital timeline. Clarke illustrates the stage characteristics of a company as it evolves from a formative-stage company to an expansion-stage company. Arbuckel-Davis studies the various stage characteristics and decides that the best opportunities are investments that support the initial expansion of a company already producing and selling a product.

To invest in private equity, Clarke states that direct investment in an acquired company typically includes the purchase of common equity and convertible preferred stock. Other sources of capital for an acquired company include bank debt and senior notes. In terms of payment priority, in the event of an acquired company's liquidation, bank debt and senior notes are normally senior to both convertible preferred stock and common equity, and convertible preferred stock is senior to common equity. When an acquired company is sold at a favorable price, bank debt, senior notes, and convertible preferred stock receive only promised payments whereas common equity earns very large returns.

Arbuckel suggests to his daughter that a private equity fund of funds may be more suitable than direct investment. He explains that the family would benefit from the ability of the fund manager to select worthy investments and maintain active involvement in those investments. Clarke notes that the compensation of a fund manager typically consists of a flat management fee plus an incentive fee arrangement. He states that the incentive fee arrangement normally includes a profit-sharing component for the general partner, a hurdle rate for the limited partner, and a return of fees by the general partner to the limited partner based on the performance of the fund over the investment timeline . Clark illustrates by providing three examples of an incentive fee arrangement, as shown in Exhibit 1.

Exhibit 1
Examples of incentive fee arrangements

	Example A	**Example B**	**Example C**
Carried Interest	20%	20%	20%
Clawback Escrow	Yes	No	Yes
Preferred Return	8%	8%	7%

Clarke cautions that the strategy for a private equity investment should be formulated before any investment decision is made. The questions to consider with respect to the family's investment policy statement include:

Question 1: How will the choice of the exit strategy affect the return objective?
Question 2: How will the limited secondary market affect the liquidity constraint?
Question 3: How will the capital call commitment period affect the time horizon constraint?

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19. Which benchmark bias *least likely* exists for the alternative investment Arbuckel has selected?

A. Survivorship bias
B. Infrequent market transactions
C. Vintage year effect

Answer = A

Survivorship bias is an interpretation issue commonly associated with Managed Futures and Hedge Funds, not private equity.

Infrequent market transactions and vintage year effects are benchmark and interpretation issues for private equity. Regarding infrequent market transactions, appraised values are often slow to adjust to new circumstances and focus only on company-specific events, so the returns may be erroneous. Furthermore, there is no generally accepted standard for appraisals. Regarding vintage year effects, investors often make comparisons with funds closed in the same year to assure that funds are compared with other funds at a similar stage in their life cycle, under similar economic conditions and incorporating the effect of market opportunities on various funds' probabilities of success.

CFA Level III
"Alternative Investments Portfolio Management," Jot K. Yau, Thomas Schneeweis, Thomas R. Robinson, and Lisa R. Weiss
Section 4.2

20. Clarke's comments regarding alternative investment issues faced by private wealth investors are *most likely* correct with respect to:

A. decision risk.
B. tax issues.
C. suitability.

Answer = A

Decision risk is the risk that the investor will wish to change strategies at the point of maximum loss. It is important that advisors to private wealth clients be aware of not only the long term horizon but also intermediate points within the longer term time horizon.

CFA Level III
"Alternative Investments Portfolio Management," Jot K. Yau, Thomas Schneeweis, Thomas R. Robinson, and Lisa R. Weiss
Section 2

21. In considering the venture capital timeline, the most suitable financing stage for the Arbuckel family is most *likely*:

A. the first stage.
B. the second stage.
C. the third stage.

Answer = B

Venture Capital that supports the initial expansion of a company already producing and selling a product is considered Second-Stage financing.

CFA Level III
"Alternative Investments Portfolio Management," Jot K. Yau, Thomas Schneeweis, Thomas R. Robinson, and Lisa R. Weiss
Section 4.1

22. Are Clarke's statements about direct investment in an acquired company *most likely* correct?

A. Yes.
B. No, because of payments in the event of liquidation.
C. No, because of payments in the event of a sale at a favorable price.

Answer = C

In the event of a sale at a favorable price, convertible preferred stock typically converts to common equity and is therefore equal in value.

CFA Level III
"Alternative Investments Portfolio Management," Jot K. Yau, Thomas Schneeweis, Thomas R. Robinson, and Lisa R. Weiss
Section 4.1.1

23. Among the incentive fee arrangements, which example is most favorable for Arbuckel?

A. Example C
B. Example B
C. Example A

Answer = C

Example A is superior, as the (1) 8% preferred return and (2) clawback provision, in combination, make it superior to both Example B and Example C. Carried interest is the share of profits that a fund manager (general partner) earns following the investor's (limited partner's) preferred return (hurdle rate). The clawback provision represents a portion of the fund manager's profits which is paid back to the investor if performance of the fund was such that he has not received back his capital contribution and earned his contractual share of profits. All else equal, the fund investor benefits from a lower carried interest, a higher preferred return and having the benefit of a clawback provision & escrow

CFA Level III
"Alternative Investments Portfolio Management," Jot K. Yau, Thomas Schneeweis, Thomas R. Robinson, and Lisa R. Weiss
Section 4.1.1

24. In formulating a private equity investment strategy, which of the questions raised by Clarke is *least likely* important?

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

Answer = B

In realizing a return, there are a number of exit strategies including an IPO, the sale of the company to another company (including another private equity firm) or a merger with another company The exit strategy will be chosen to maximize the return at the time of exit.

CFA Level III
"Alternative Investments Portfolio Management," Jot K. Yau, Thomas Schneeweis, Thomas R. Robinson, and Lisa R. Weiss
Section 4.3.2

Dodson Case Scenario

Gregory Dodson, CFA, is an investment consultant who advises individual and institutional clients on their equity portfolios. During a typical work week, he is called upon to evaluate a variety of situations and provide expert advice. This week, he is meeting with three clients.

Dodson's first client meeting is with the Magnolia Foundation, a small not-for-profit organization. Magnolia currently uses three long-only portfolio managers for its equity investments. Details of those investments, including expected performance relative to Magnolia's equity benchmark, the S&P 500 Index, are shown in Exhibit 1.

Exhibit 1
Magnolia Foundation Equity Portfolio Managers

	Investment Size ($ millions)	Expected Alpha	Expected Tracking Error
Manager A	140	0%	0%
Manager B	40	1.50%	2.50%
Manager C	20	2.00%	4.00%

Magnolia's goal for its total equity investment is expected alpha greater than 0.40% and expected tracking error less than 1.00%.

Dodson's second client meeting is with Sarah Tan, a wealthy individual who is actively involved in managing her investments. Tan wants to add a $100 million allocation to US midcap stocks, represented by the US S&P 400 Midcap Index, to her long-term asset allocation. No investment has been made to meet this new allocation.

Tan has not found any manager capable of generating positive alpha in US midcap stocks. She has, however, identified a long-only portfolio manager of Canadian equities whom she believes will produce positive alpha. This manager uses the S&P/TSX (Toronto Stock Exchange) Index as a benchmark. Tan wants to create a portable alpha strategy that will earn the alpha of the Canadian equity portfolio and meet the new benchmark allocation to US midcap stocks. She asks Dodson for advice to establish this strategy. Tan provides some information about the security selection methods used by the Canadian equity portfolio manager. The Canadian manager uses a proprietary discounted cash flow model to analyze all stocks in the S&P/TSX Index and purchases those with market prices that are the most below the intrinsic value estimated by his model, regardless of their price-to-earnings ratios (P/Es).

Dodson's third client meeting is with the chief investment officer (CIO) of Susquehanna Industries' pension fund. The fund needs to establish a $50 million portfolio that replicates the Russell 2000 Index, an index of small-cap US equities. The CIO's goal is to minimize trading costs. He asks Dodson to suggest an investment approach that will meet this goal. The CIO also outlines his portfolio managers' sell discipline with respect to the pension fund's actively managed value and growth equity portfolios. Currently, the managers monitor the P/E of each stock held. A value stock is sold when its P/E rises to its 10-year historical average. A growth stock is sold when its P/E falls to its 10-year historical average.

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25. The Magnolia Foundation's approach to portfolio construction is *best* described as:

A. using a completeness fund.
B. a portable alpha strategy.
C. a core–satellite structure.

Answer = C

A large portion of the portfolio is invested with a manager that is expected to match the portfolio's benchmark (zero alpha, zero tracking error), forming the core of the portfolio.

CFA Level III
"Equity Portfolio Management," Gary L. Gastineau, Andrew R. Olma, and Robert G. Zielinski
Section 7.1

26. Do the Magnolia Foundation's current equity investments *most likely* meet its total equity investment return and risk goals?

A. Yes
B. No, the expected alpha is too low
C. No, the expected tracking error is too high

Answer = A

The expected alpha of the portfolio is

$$(\frac{\$140}{\$200}\times 0\%)+(\frac{\$40}{\$200}\times 1.5\%)+(\frac{\$20}{\$200}\times 2.0\%)=0.50\%$$

, which is greater than 0.40%.

The portfolio’s expected tracking error is

$$[(\frac{\$140}{\$200}\times 0\%)^2+(\frac{\$40}{\$200}\times 2.5\%)^2+(\frac{\$20}{\$200}\times 4.0\%)^2]^{1/2}=0.64\%$$

which is less than 1.00%.

CFA Level III
"Equity Portfolio Management," Gary L. Gastineau, Andrew R. Olma, and Robert G. Zielinski
Section 7

27. Which of the following combinations of futures positions would *most likely* be included in Dodson's advice to Tan regarding her intended portable alpha strategy?

A. Short position in S&P/TSX futures and long position in S&P 400 futures
B. Long position in S&P/TSX futures and short position in S&P 400 futures
C. Long position in S&P/TSX futures and long position in S&P 400 futures

Answer = A

The portfolio needs to shed exposure to the return of the S&P/TSX and gain exposure to the return of the S&P 400.

CFA Level III
"Equity Portfolio Management," Gary L. Gastineau, Andrew R. Olma, and Robert G. Zielinski
Section 7.3

28. The style of the Canadian equities portfolio manager is *most likely*:

A. growth.
B. market oriented.
C. value.

Answer = B

The portfolio manager is willing to buy both value and growth stocks (regardless of P/E). He focuses solely on whether the stock is trading below its intrinsic value. This approach is also known as a blend or core style with reference to equity investing, which is an intermediate grouping for investment disciplines that cannot be clearly categorized as value or growth.

CFA Level III
"Equity Portfolio Management," Gary L. Gastineau, Andrew R. Olma, and Robert

G. Zielinski
Section 5.1

29. Given the manager's goal, what approach should Dodson *most likely* recommend for the $50 million portfolio of the Susquehanna Industries' pension fund?

A. Full replication
B. Optimization
C. Stratified sampling

Answer = C

The portfolio contains small-cap stocks, which indicates an approach other than full replication, and the desire to minimize transaction costs indicates stratified sampling rather than optimization.

CFA Level III
"Equity Portfolio Management," Gary L. Gastineau, Andrew R. Olma, and Robert G. Zielinski,
Section 4.2

30. The Susquehanna Industries' pension fund value and growth portfolio managers follow a sell discipline that is *best* described as:

A. deteriorating fundamentals.
B. rule driven.
C. substitution strategy.

Answer = B

Valuation-level sell disciplines are rule driven.

CFA Level III
"Equity Portfolio Management," Gary L. Gastineau, Andrew R. Olma, and Robert G. Zielinski
Section 5.4

Midwest Case Scenario

Erik Smith, CFA, is director of investments for Midwest Industries' pension fund. He is meeting with James Brown, ASA, his actuary, and Paul Jones, CFA, an investment consultant, to discuss changes to the fund's management and asset allocation. Brown makes the following statement regarding Midwest's pension plan:

> Discounting the projected benefit cash flows using a market-based discount rate of 6.2%, I find that the present value of Midwest's pension fund is $1 billion. The fund's duration is 12, and the plan assets currently cover 100% of this liability. Because the objective is primarily to meet these liabilities and we are using market rates as the discount rate, we should select a bond market index as the benchmark.

Jones offers his opinion on the appropriate investment strategy for the pension fund:

> I believe that an immunization strategy that meets multiple liabilities is the best strategy. For multiple liability immunization, the necessary and sufficient conditions are: (1) the duration of the portfolio must equal the duration of the weighted average liabilities and (2) the distribution of durations of individual portfolio assets must have a wider range than the distribution of the liabilities. This strategy will not require us to rebalance the portfolio if interest rates change.

Smith expresses some concerns about immunization as a strategy:

> Even if immunization minimizes risk, it assumes that the yield curve shifts in a parallel fashion, which is not what I have observed in the market. In addition, with immunization, the ability to earn some incremental return to offset additional benefit requirements is not possible.

Jones then comments on the portfolio holdings:

> The current portfolio contains 40% in mortgage-backed securities (MBS), which present certain risks when immunizing a portfolio. These securities have market values that are below their purchase prices, and I am reluctant to recommend a sale in which we have to recognize a loss.

The discussion progresses to the implementation of an investment strategy. Brown presents several alternative portfolios that could be used to implement this strategy. Before presenting the portfolios, he states:

> Although the pension fund is currently fully funded, I am concerned that future service benefits are not covered unless we make additional contributions. We should evaluate the following alternative portfolios to determine which one best addresses this concern while covering the liability's market-related exposures.

> Portfolio A: The fixed-income assets will closely mimic the liabilities with regard to both expected return and variability. This portfolio is a low-risk strategy to meet our objectives.
>
> Portfolio B: This portfolio hedges uncompensated liability risks, such as interest rate risk, with derivatives. This approach would free up capital to invest in higher-returning assets, such as equities and bonds.
>
> Portfolio C: This portfolio has a traditional mix of securities, with 60% in equities and the remainder in medium-duration bonds, but does not fully hedge interest rate risk.

Smith is not completely convinced that the portfolio choices offer the right approach for the pension fund, and he offers the following alternative:

> I believe cash flow matching is a superior strategy. It allows funds to be available when each liability is due and requires less cash to fund liabilities. A conservative interest rate assumption for cash must be made throughout the life of the plan.

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31. Based on Midwest's stated objective, has Brown recommended the *most* appropriate benchmark?

A. No, because the liability itself is the benchmark
B. No, because the benchmark should contain a broader universe of asset classes
C. Yes

Answer = A

The investor with liabilities will measure success by whether the portfolio generates the funds necessary to pay out the cash associated with the liabilities—in this case, a defined benefit pension plan. Meeting the liability is the investment objective; as such, it also becomes the portfolio's benchmark.

CFA Level III
"Fixed-Income Portfolio Management – Part I," H. Gifford Fong and Larry D. Guin
Section 4

32. Jones's opinion of the appropriate investment strategy for the pension fund is *least likely* correct with respect to:

A. rebalancing the portfolio under certain conditions.
B. the distribution of durations
C. matching durations.

Answer = A

The portfolio *does* need to be rebalanced. As interest rates fluctuate or as time elapses, the portfolio duration will also change; thus, the portfolio must be rebalanced to adjust duration to the desired level.

CFA Level III
"Fixed-Income Portfolio Management – Part I," H. Gifford Fong and Larry D. Guin
Section 4.1

33. Smith's concerns regarding immunization as a strategy are *best* addressed by:

A. decreasing the dispersion of cash flows around the horizon date.
B. matching assets to liabilities by using functional duration and targeting a cushion spread.
C. increasing the dispersion of cash flows around the horizon date and targeting a cushion spread.

Answer = B

Applying functional duration or key rate durations allows durations along the yield curve to match those of the liabilities. A nonparallel shift in the yield curve will affect assets and liabilities in an offsetting manner. In addition, the portfolio could allow for active management to generate additional returns—for an incremental difference between the minimum acceptable return and the higher possible immunized rate, which is referred to as the "cushion spread."

CFA Level III
"Fixed-Income Portfolio Management – Part I," H. Gifford Fong and Larry D. Guin
Section 4.1

34. The risk specific to MBS that Jones is *most likely* concerned about is:

A. interest rate risk.
B. contingent claim risk.
C. cap risk.

Answer = B

When such assets as MBS have a contingent claim provision, explicit or implicit, there is an associated risk. As rates fall, the security could have coupons halted and principal repaid. The result is reinvestment risk. It also limits any potential upside that would be generated by a non-callable security.

CFA Level III
"Fixed-Income Portfolio Management – Part I," H. Gifford Fong and Larry D. Guin
Section 4.1.2.2

35. Based on Brown's concerns regarding future benefits, which portfolio is the *most* appropriate?

A. Portfolio C
B. Portfolio B
C. Portfolio A

Answer = B

Portfolio B is the optimal strategy. Interest rate swaps are used to mimic the term structure exposure of the liability, freeing up capital to invest in higher-returning assets, such as equities. In this liability-relative approach, investments are in long-duration bonds, equities (a small allocation), and interest rate derivatives (to hedge the liability). Although interest rate risk is hedged with derivatives, Portfolio B allows for additional expected return by including equities to meet future benefits.

CFA Level III
"Fixed-Income Portfolio Management – Part I," H. Gifford Fong and Larry D. Guin
Section 4.1

"Linking Pension Liabilities to Assets," Aaron Meder and Renato Staub
Section 4

36. Is Smith's assertion about cash flow matching *most likely* correct?

A. No, he is incorrect regarding the interest rate assumption
B. Yes
C. No, he is incorrect regarding cash balances

Answer = C

Cash flow matching requires a relatively conservative rate-of-return assumption for short-term cash, and cash balances may occasionally be substantial. In contrast, an immunized portfolio is essentially fully invested at the remaining horizon duration. Funds from a cash flow–matched portfolio must be available when each liability is due.

CFA Level III
"Fixed-Income Portfolio Management – Part I," H. Gifford Fong and Larry D. Guin
Section 4.2

Berg Case Scenario

Alpha Consultants is working with the German-based Berg Pension Fund to select a fixed-income firm to manage a €100 million global bond portfolio. Delta Managers is the third and final presenter to Berg's investment committee. After going through its investment philosophy and process, Delta addresses several questions.

Alpha expresses concern about the use of leverage in the portfolio. Delta indicates that by using 100% leverage, it can generate incremental returns. Delta provides the committee with the portfolio's characteristics in Exhibit 1.

Exhibit 1
Portfolio Characteristics

	Assets	Liabilities
Portfolio (€ millions)	200	100
Duration	6	1
Expected return (%)	5.5	—
Interest rate on borrowed funds (%)	—	4.75

Berg's committee is concerned that the portfolio's duration is inappropriate given the committee's view that rates might rise. They ask how Delta can use the futures market to manage the portfolio's interest rate risk. The committee states that it would like a target duration of 4.

Exhibit 2
Futures Market Data

Futures contract price	€ 100,000
Conversion factor	1.15
Duration of cheapest-to-deliver bond	5.2
Market price of cheapest-to-deliver bond	€ 98,000

Delta then makes the following statement to the committee:

> International interest rates are not perfectly correlated. In fact, because this is a global bond portfolio, 60% of the portfolio is from German issuers and has average duration of 7 and the remainder is from UK issuers with average duration of 4.5, both before any hedging activities to meet the committee's duration target. Historically, the country beta of the United Kingdom (i.e., for German rates relative to UK rates) is estimated to be 0.55.

Berg's committee then asks Delta to make a recommendation about whether the portfolio should be hedged back to the euro, its domestic currency. Delta responds that short interest rates are currently 2.50% in the United Kingdom and 3.25% in Germany and that Delta's currency strategists forecast that the euro will depreciate by 0.35%.

Berg's committee then asks whether a global portfolio would benefit from the inclusion of emerging market debt. Delta responds that returns can be attractive in emerging markets during certain periods but that the following risks of this asset class must be understood:

> Risk 1: Returns are frequently characterized by substantial positive skewness.
> Risk 2: If a default of sovereign debt occurs, recovery against sovereign states can be difficult.
> Risk 3: The frequency of default and ratings transition is significantly higher than it is in developed market corporate bonds with similar ratings.

At the conclusion of the presentation, Alpha and Berg's committee convene to discuss which of the three managers that presented should be selected for the €100 million mandate. Alpha advises Berg that the following considerations are important when evaluating fixed-income portfolio managers:

> Criterion 1: Style analysis will enable us to understand the active risks the manager has taken relative to the benchmark and which biases have consistently added to performance.
> Criterion 2: Decomposing the portfolio's historical returns will show whether the manager's skills will allow the manager to consistently outperform over time.
> Criterion 3: We could select two of the three managers that presented if our analysis shows that the correlation between their alphas is low.

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37. Based on Exhibit 1, the duration of the equity in the leveraged portfolio is *closest* to:

    A. 5.00.
    B. 11.00.
    C. 5.50.

    Answer = B

    Delta plans to leverage the €100 million portfolio by 100% by borrowing an additional €100 million. So, the duration of equity is calculated as follows:

$$D_E = \frac{D_A A - D_L L}{E}$$

$$D_E = \frac{6.00\ (200) - 1.00(100)}{100}$$

CFA Level III
"Fixed-Income Portfolio Management – Part II," H. Gifford Fong and Larry D. Guin
Section 5.2

38. Based on Exhibits 1 and 2, and assuming no leverage is used, the number of futures contracts Delta needs to sell to achieve the Berg committee's target duration is closest to:

A. 682.
B. 784.
C. 902.

Answer = C

To hedge against rising rates, Delta needs to reduce duration by selling the following number of bond futures contracts:

$$\left(\frac{(D_T - D_I) \times P_I}{D_{CTD} P_{CTD}}\right) \times \text{Conversion factor for the CTD bond,}$$

where

D_T= target duration for the portfolio

D_I =initial duration for the portfolio

P_I = initial market value of the portfolio

D_{CTD} = duration of the cheapest-to-deliver bond

P_{CTD}= price of the cheapest-to-deliver bond

$$\left(\frac{(4.00 - 6.00) \times 200{,}000{,}000}{5.2 \times 98{,}000}\right) \times 1.15 = \frac{-400{,}000{,}000}{509{,}600} \times 1.15 = -902.669$$

CFA Level III
"Fixed-Income Portfolio Management – Part II," H. Gifford Fong and Larry D.

Guin
Section 5.3.4.1

39. Based on Delta's statement, the contribution to the portfolio's overall duration from UK bonds is *closest* to:

A. 0.99.
B. 1.54.
C. 1.49.

Answer = A

The duration of the UK bonds is 4.5, and the country beta is estimated to be 0.55 relative to Germany. Thus, the duration contribution to a German domestic portfolio is $4.50 \times 0.55 = 2.475$. Because a portfolio's duration is a weighted average of the duration of the bonds in the portfolio, the contribution to the portfolio's duration is equal to the adjusted UK bond duration of 2.475 multiplied by its weight in the portfolio: $2.475 \times 0.40 = 0.99$.

CFA Level III
"Fixed-Income Portfolio Management – Part II," H. Gifford Fong and Larry D. Guin
Section 6.1

40. Based on Delta's expectations regarding currencies, and assuming that interest rate parity holds, should Delta *most likely* recommend using forward contracts to hedge the portfolio's British pound exposure?

A. No, because the euro is expected to depreciate by more than 0.35%
B. Yes
C. No, because the euro is expected to appreciate by more than 0.35%

Answer = B

Using interest rate parity, the euro is expected to depreciate by 3.25% – 2.50% = 0.75%. Delta's strategists believe that the euro will depreciate by only 0.35%. Based on expected returns alone, Delta should hedge the currency risk using a forward contract and lock in a 0.75% gain in British pounds.

CFA Level III
"Fixed-Income Portfolio Management – Part II," H. Gifford Fong and Larry D. Guin
Section 6.2

41. Delta is *least likely* correct with respect to which risk of investing in emerging market debt?

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

Answer = A

The statement about Risk 1 is incorrect; emerging market debt returns are characterized by significant *negative* skewness.

CFA Level III
"Fixed-Income Portfolio Management – Part II," H. Gifford Fong and Larry D. Guin
Section 6.4

42. Which of the criteria outlined by Alpha is *least accurate* with respect to the selection of a fixed-income manager?

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

Answer = B

Decomposing a portfolio's historical returns shows whether a manager has skill in security selection. For long periods, when fund fees and expenses are factored in, the realized alpha of fixed-income managers has averaged close to zero with little evidence of persistence.

CFA Level III
"Fixed-Income Portfolio Management – Part II," H. Gifford Fong and Larry D. Guin
Section 7

Larsson Case Scenario

Karin Larsson is a new employee in the risk management group at Baltic Investment Management, Inc. She is replacing Sten Reinfeldt, who has agreed to help her transition into her new role. Reinfeldt explains that risk governance refers to the process of setting risk management policies and standards for an organization, thus enabling firms to establish appropriate ranges for exposures and to emphasize individual risk factors within a centralized type of enterprise risk management.

Baltic manages proprietary investment strategies, which creates risk exposures for the firm. Reinfeldt explains that these risks are both financial and nonfinancial in nature and proceeds to list several specific sources of risk:

Risk 1: Model risk
Risk 2: Liquidity risk
Risk 3: Settlement risk

Baltic uses value at risk (VaR) as a probability-based measure of loss potential for its fixed-income strategies. Reinfeldt states that the VaR for the fixed-income strategy is SEK10 million during any five-day period with a probability of 5%. Larsson asks Reinfeldt to estimate the fixed-income strategy's VaR at given levels of probability for specified periods.

Baltic manages an equity strategy in addition to the fixed-income strategy. The trading desks for each strategy are granted risk budgets that consider the allocation of both capital and daily VaR. The correlation between the equity desk and the fixed-income desk is low. Exhibit 1 provides risk-budgeting data for both desks.

Exhibit 1
Trading Desk Data
(SEK million)

	Equity Desk	**Fixed-Income Desk**
Capital	200	100
Daily VaR	10	10
Monthly Profit	25	15

Reinfeldt comments that the risk management group has adopted stress testing to complement VaR analysis given some of its limitations. He lists several of limitations of VaR for Larsson:

Limitation 1: VaR inaccurately measures risk exposure because it overestimates the magnitude and frequency of the worst returns.

Limitation 2: VaR incompletely measures risk exposure because it does not incorporate positive results into its risk profile.

Limitation 3: VaR incorrectly measures risk exposure because there are limited calculation methods and they often yield similar outcomes.

Larsson is concerned about credit exposure within the fixed-income strategy and asks Reinfeldt how Baltic manages this risk. Reinfeldt responds, "We manage credit risk in a number of ways. First, we use credit derivatives in order to transfer credit risk. Second, we mark to market our credit derivatives in order to post collateral whenever a credit derivative's value is positive to Baltic and negative to the swap counterparty."

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43. Which element of Reinfeldt's explanation about risk governance is *least likely* correct?

    A. Ranges for exposures
    B. Individual risk factors
    C. Risk management policies

    Answer = B

    Risk management incorporates a centralized type of risk management called "enterprise risk management" (ERM). ERM's distinguishing feature is a firm-wide or across-enterprise perspective. The corporate governance structure is much broader than risk governance and encompasses the system of internal controls and procedures used to manage individual companies.

    CFA Level III
    "Risk Management," Don M. Chance, Kenneth Grant, and John Marsland
    Section 2, 3

44. Which risk listed by Reinfeldt is *most likely* a source of financial risk?

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

    Answer = B

    Liquidity risk is considered a financial risk.

    CFA Level III
    "Risk Management," Don M. Chance, Kenneth Grant, and John Marsland
    Section 4

45. Given Reinfeldt's estimate of VaR for the fixed-income strategy, which of the following statements is *most likely* accurate? During a five-day period, there is a:

A. 5% probability the portfolio will lose at least SEK10 million.
B. 95% probability the portfolio will lose at least SEK10 million.
C. 5% probability the portfolio will lose no more than SEK10 million.

Answer = A

VaR is a minimum. That is, there is a 5% chance that the portfolio will lose SEK10 million or more.

CFA Level III
"Risk Management," Don M. Chance, Kenneth Grant, and John Marsland
Section 5.2, 5.2.1

46. With regard to the fixed income and equity trading desks, based on Exhibit 1, which of the following statements is *most likely* accurate?

A. The trading desks have the same risk budget.
B. The combined daily VaR of the trading desks is less than SEK20 million.
C. The fixed-income desk generates better returns on its allocated capital given its VaR.

Answer = B

The trading desks engage in activities that are weakly correlated; therefore, a diversification benefit occurs. Thus it would be reasonable to expect that the combined VaR of the two desks will be less than the sum of the VaRs of the individual desks (SEK20 million).

CFA Level III
"Risk Management," Don M. Chance, Kenneth Grant, and John Marsland
Section 6.1

47. Which of the limitations of VaR analysis given by Reinfeldt is *most likely* correct?

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

   Answer = C

   VaR fails to incorporate positive results into its risk profile and, therefore, may provide an incomplete picture of overall exposures

   CFA Level III
   "Risk Management," Don M. Chance, Kenneth Grant, and John Marsland
   Section 5.3

48. Is Reinfeldt's statement regarding credit derivatives *most likely* correct?

   A. No, he is incorrect about transferring credit risk
   B. No, he is incorrect about marking to market
   C. Yes

   Answer = B

   Whenever the mark-to-market value is positive to Baltic, the credit derivative counterparty, not Baltic, will post collateral. Baltic will post collateral only if the mark-to-market value is negative to Baltic/positive to the swap counterparty.

   CFA Level III
   "Risk Management," Don M. Chance, Kenneth Grant, and John Marsland
   Section 6.2

Bing Case Scenario

Mary Bing is a senior portfolio manager at NMS Advisors (NMSA), an investment and wealth management firm with offices in Boston and Chicago. NMSA provides investment advisory and asset allocation services to private and institutional clients. Bing is an expert in the use of derivatives to manage portfolios. She is assisted by two analysts, Rakesh Sharma and Hernando Torres.

Bing is performing a review of client portfolios. She has collected the stock and bond index futures information that is presented in Exhibit 1. Futures prices are shown after accounting for the multiplier. Bing also notes that risk-free bonds with one year to maturity yield 1.5%.

Exhibit 1
Selected Information on Futures Contracts

Futures Contract	Price	Beta	Modified Duration
S&P 400 MidCap Index	$481,900	1.12	N/A
S&P Small Cap 600 Index	$223,300	1.23	N/A
Barclays US Aggregate Bond Index	$165,260	N/A	4.89

Bing manages a portfolio invested in US small-cap stocks for the Wellington Academy Endowment. The portfolio has a current market value of $321 million. Bing and her team believe that small-cap stocks will perform well over the next three months. After consulting with the endowment's trustees, Bing decides to raise the portfolio's beta from 0.8 to 1.2 for the next three months. She has also been informed that the endowment has received a $15 million cash donation that is to be invested in small caps. Bing and her team decide to use futures to equitize the new cash inflow for a period of three months.

Another one of Bing's clients is KP McLane Incorporated (KPM Inc.), a US-based manufacturer of men's apparel. The current market value of KPM Inc.'s pension portfolio is $950 million, with a 65% allocation to US midcap stocks and a 35% allocation to US bonds. The stock allocation has a beta of 1.45, and the bond allocation has a modified duration of 5.3. Bing's research indicates that midcap stocks are likely to underperform in the near term. Accordingly, she decides to reduce the allocation to midcap stocks to 60% and increase the bond allocation to 40%.

KPM Inc. exports a significant portion of its products to eurozone countries. KPM Inc. expects the dollar to rise against the euro and is concerned that this change could lead to a decline in sales in the eurozone. KPM Inc. asks Bing for advice on how to manage this risk exposure.

Bing asks Sharma, "We adjusted the asset allocation of the KPM Inc. pension fund using futures. Could we have used swaps to carry out the change?"

Sharma responds, "Yes, we could have used a combination of a fixed-income swap on the Barclays US Aggregate Bond Index and an equity swap on the S&P 400 MidCap Index, where the notional value is $47.5 million."

TCMS, a medical college, is also a client of NMSA. TCMS currently has a two-year loan outstanding with a 5.5% fixed annual interest rate. Bing expects a decline in interest rates and advises TCMS to enter into a two-year interest rate swap in which TCMS would pay Libor + 0.5% and receive a 5.5% fixed rate. From TCMS's perspective, the duration of a two-year fixed rate loan is –1.5 years and the duration of a floating rate loan is –0.125. Bing asks Torres, "Can you comment on the overall impact of the interest rate swap on TCMS?"

Torres responds, "The net effect of entering the swap is to reduce the interest rate sensitivity of the overall loan plus swap position relative to the loan by itself. If the swap is added, however, it will be harder for TCMS to predict cash flows, and from this perspective, the swap does not serve as a good hedge."

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49. To adjust the beta of the $321 million Wellington Academy Endowment portfolio, the number of small-cap futures contracts Bing would need to buy is *closest* to:

A. 1,402.
B. 467.
C. 54.

Answer = B

The number of futures, N_f, is calculated as follows:

$$N_f = \left(\frac{\beta_T - \beta_S}{\beta_f}\right)\left(\frac{S}{f}\right) = \left(\frac{1.2 - 0.8}{1.23}\right)\left(\frac{\$321{,}000{,}000}{\$223{,}300}\right) = 467.49$$

That is, buy 467 S&P Small Cap 600 futures contracts.

CFA Level III
“Risk Management Applications of Forward and Futures Strategies,” Don M. Chance
Section 3.2

50. For Bing to equitize the $15 million cash inflow received by the Wellington Academy Endowment, the number of small-cap futures purchased and the amount invested in risk-free bonds, respectively, are *closest* to:

A. 67 S&P Small Cap 600 Futures and $14,905,516 Risk-Free Bonds
B. 55 S&P Small Cap 600 Futures and $15,000,000 Risk-Free Bonds
C. 83 S&P Small Cap 600 Futures and $14,944,271 Risk-Free Bonds

Answer = A

To create a synthetic equity position (equitize cash) using the $15 million cash inflow, Bing should purchase futures and invest in risk-free bonds. The number of contracts is:

$$N_f = \frac{V(1+r)^T}{\text{qf}} = \frac{15,000,000(1+0.015)^{0.25}}{223,300} = 67.42$$

That is, Bing should go long 67 contracts.

The amount to be invested in risk-free bonds is:

$$V^* = \frac{N_t^* \text{qf}}{(1+r)^T} = \frac{67(223,300)}{(1+0.015)^{0.25}} = 14,905,516$$

CFA Level III
"Risk Management Applications of Forward and Futures Strategies," Don M. Chance
Section 3.3.2

51. To carry out the proposed adjustment to the KPM Inc. pension portfolio, the number of S&P 400 MidCap futures Bing would need to sell and the number of Barclays US Aggregate Bond Index futures she would need to buy, respectively, are *closest to*:

A. 76 S&P 400 MidCap Futures and 265 Barclays US Bond Futures
B. 99 S&P 400 MidCap Futures and 287 Barclays US Bond Futures
C. 128 S&P 400 MidCap Futures and 312 Barclays US Bond Futures

Answer = C

$950,000,000 × 0.05 = $47,500,000 to be converted from equity to cash to bonds.

$$N_{sf} = \left(\frac{\beta_T - \beta_S}{\beta_f}\right)\left(\frac{S}{f_s}\right) -127.61 = \left(\frac{0 - 1.45}{1.12}\right)\left(\frac{47{,}500{,}000}{481{,}900}\right)$$

$$N_{bf} = \left(\frac{MDUR_T - MDUR_B}{MDUR_f}\right)\left(\frac{B}{f_b}\right) 311.52 = \left(\frac{5.3 - 0}{4.89}\right)\left(\frac{47{,}500{,}000}{165{,}260}\right)$$

CFA Level III
"Risk Management Applications of Forward and Futures Strategies," Don M. Chance
Section 4.1

52. The type of exchange rate risk that KPM Inc. faces is *best* described as:

A. translation exposure.
B. transaction exposure.
C. economic exposure.

Answer = C

The type of exchange rate risk that causes overseas sales of a US manufacturer to decline in the face of a stronger US dollar is economic exposure. In contrast, transaction exposure arises when overseas sales denominated in a foreign currency must be converted to the domestic currency. In the face of a rising dollar, eurozone sales will convert to a lower amount in dollars relative to the amount repatriated if the dollar declines versus the euro. Translation exposure is not relevant here because KPM Inc. does not have overseas subsidiaries. Translation exposure arises when the financial statements of an overseas subsidiary must be converted to the domestic currency.

CFA Level III
"Risk Management Applications of Forward and Futures Strategies," Don M. Chance
Section 5

53. Is Torres' response to Bing *most likely* correct?

A. No, he is incorrect about hedging ability of the swap.
B. Yes.
C. No, he is incorrect about the sensitivity of the overall position.

Answer = B

Torres is correct on both accounts. The duration of the original loan is –1.5. The fixed leg of the interest rate swap has a duration of 1.5, and the duration of the variable leg of the swap is –0.125. Thus, the duration of the overall position is –0.125. The overall sensitivity is reduced. The firm will find it harder to predict cash flows, however, because the net exposure is to the variable Libor rate. Therefore, Torres is correct that the swap serves as a poor hedge from the perspective of predicting cash flows.

CFA Level III
"Risk Management Applications of Swap Strategies," Don M. Chance
Section 2.1

54. The pair of swaps Sharma should *most likely* describe are:

A. **Equity Swap**: Pay Libor, Receive return on equity index, **Fixed Income Swap**: Pay Libor, Receive return on bond index
B. **Equity Swap**: Pay return on equity index, Receive Libor, **Fixed Income Swap**: Pay Libor, Receive return on bond index
C. **Equity Swap**: Pay Libor, Receive return on equity index, **Fixed Income Swap**: Pay return on bond index, Receive Libor

Answer = B

The correct combination of swaps is:

Equity swap: Pay return on $47.5 million on the S&P 400 MidCap Index and receive LIBOR on $47.5 million

Interest rate swap: Pay LIBOR on $47.5 million and receive return on $47.5 million on the Barclays US Aggregate Bond Index.

CFA Level III
"Risk Management Applications of Swap Strategies," Don M. Chance
Section 4.3

Ng Case Scenario

Katherine Ng, a Global Investment Performance Standards (GIPS) specialist, has been hired as a consultant to assist Rune Managers in becoming a GIPS-compliant firm. Rune is a global asset manager with several divisions around the world that invest in both stock and bond strategies. James Arnott, a performance specialist at Rune, is responsible for the project. In their first meeting, Ng and Arnott discuss the GIPS standards and the steps Rune will need to take to become compliant.

Ng recommends starting with the definition of the firm. She tells Arnott that how the firm is defined will affect the compliance process and that the standards recommend the firm be defined as broadly as possible. Arnott replies that Rune management has been discussing the firm definition, and they want the definition to include all Rune divisions except the European division, Rune Europe. Rune Europe has its own strategies and management team that are distinct from the rest of Rune. Ng replies that the Rune Europe division should be included in the definition of the firm because the division markets itself as part of Rune Managers.

Ng then asks about Rune's policies for the inclusion of portfolios in composites. Arnott responds that Rune has the following policies for all composites:

> Policy 1: All new accounts funded with cash or securities on or before the 10th day of the month are added to the composite at the beginning of the following month. Those funded after the 10th day of the month are added at the beginning of the 2nd month after funding, or at the beginning of the calendar month after the proceeds are substantially invested in the appropriate strategy.
>
> Policy 2: All portfolios are deemed "non-discretionary" on the date the notice of termination of the management relationship is received and removed from the composite at the end of the month of notification.

The discussion then moves on to a new composite that Rune is constructing. Arnott tells Ng that the marketing department has decided to target domestic Swiss investors and would like to carve out the Swiss portion of international and global accounts for the period of 1 January 2006 through 1 January 2011 and allocate cash to each carved-out segment to create a Swiss franc (CHF) composite. Ng responds that this new composite will comply with the standards, but Rune must disclose the percentage of composite assets that are carve-outs for each annual period end, as well as the policy used to allocate cash to the carved-out segments.

Arnott interjects that the marketing department is looking forward to claiming GIPs compliance in advertisements. He is meeting with the marketing department and asks Ng what they need to be aware of regarding the Standards in advertising. Ng responds that there are several requirements in the GIPS Advertising Guidelines; specifically, the following must be disclosed in the advertisements: the firm description, composite and benchmark descriptions, and the number of accounts in the composite.

Arnott and Ng then move on to discuss one of Rune's GIPS-compliant performance presentations, provided in Exhibit 1.

Exhibit 1
Rune Mid-Capitalization Value Equity Composite
Benchmark: Russell Midcap Value Index

Year	Composite Gross Return (%)	Composite Net Return (%)	Benchmark Return (%)	Composite 3-Year Std. Dev. (%)	Number of Portfolios	Internal Dispersion (%)	Composite % of Firm Assets
2006	11.2	10.69	12.65		15	0.09	7.1
2007	18.92	18.68	20.22		19	0.06	7.2
2008	0.07	–0.17	–1.42		22	0.46	6.8
2009	–33.75	–33.95	–38.44		23	0.25	5.5
2010	31.44	31	34.21		26	0.95	5.9
2011	22.09	21.73	24.75	22.83	25	0.21	6.9

Rune Managers claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Rune Managers has not been independently verified.

Notes:

1. Rune Managers is an investment manager registered with the US SEC. Rune Managers has divisions in Europe, Asia, and the United States that invest in various equity and bond strategies.

2. The Rune Mid-Capitalization Equity Composite includes all institutional portfolios that invest in mid-capitalization US equities, with the goal of providing long-term capital growth and steady income from dividends by investing in low price-to-earnings, undervalued securities.

3. A complete list and description of Rune Managers' composites, as well as policies for valuing portfolios and preparing compliant presentations, are available upon request.

4. The composite was created on 30 November 2005.

5. Leverage, derivatives, and short positions are not used by this strategy.

6. Performance is expressed in US dollars. The returns include the reinvestment of all income. Gross-of-fees returns are presented before management and custodial fees but after all trading expenses. Net-of-fees returns are calculated by deducting the actual fees of the accounts from the gross composite return.

7. The management fee schedule is as follows: 0.80% on the first $10 million, 0.55% on the next $40 million, 0.40% on assets greater than $50 million.

8. This presentation is not required to conform to any laws or regulations that conflict with the GIPS standards.

9. Internal dispersion is calculated using the asset-weighted standard deviation of annual gross returns of those portfolios that were included in the composite for the entire year.

10. The three-year annualized standard deviation measures the variability of the composite and the benchmark returns during the preceding 36-month period. The standard deviation is not presented for 2006 through 2010 because monthly composite and benchmark returns were not available, and it is not required for periods prior to 2011.

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55. In their discussion of the Rune Europe division, which of the following is *most likely* correct?

A. Ng's analysis, because of how the division markets itself
B. Arnott's analysis, because of how the division is managed
C. Arnott's analysis, because of how the strategies are run

Answer = A

Ng is correct. Because Rune Europe is using the Rune Managers name and marketing materials, the division is not being held out to clients or potential clients as a distinct business entity and so it should be included in the definition of the firm.

CFA Level III
"Global Investment Performance Standards," Philip Lawton
Section 3.1

56. Which policy on the inclusion of portfolios in composites is *most likely* compliant with the GIPS standards?

A. Policy 1 and Policy 2
B. Policy 1
C. Policy 2

Answer = B

The policy on account inclusion is compliant with the standards.

CFA Level III
"Global Investment Performance Standards," Philip Lawton
Section 3.9

57. In the discussion of carve-outs, Ng is *least likely* correct in her statement regarding the:

A. compliance of the composite.
B. disclosure of the percentage of composite assets.
C. disclosure of the cash allocation policy.

Answer = A

For periods after 1 January 2010, carve-outs must include their own cash balance in order to be included in a composite, so a cash allocation policy for periods after 1 January 2010 would not be GIPS compliant.

CFA Level III
"Global Investment Performance Standards," Philip Lawton
Section 3.10

58. In the discussion of the GIPS Advertising Guidelines, Ng is *most likely* correct in her statement regarding the disclosure of:

A. number of accounts in the composite.
B. composite description.
C. firm description.

Answer = C

The firm description must always be presented in GIPS compliant advertisements. The number of accounts in the composite need not be disclosed in advertisements, and only advertisements that include performance information must disclose the composite and benchmark descriptions.

CFA Level III
"Global Investment Performance Standards," Philip Lawton
Section 5

59. Regarding the disclosures contained in the notes to Exhibit 1, the notes *most likely* required are:

A. 1, 5 and 6.
B. 6, 7 and 9.
C. 2, 7 and 8.

Answer = B

The currency used to express performance, whether any fees other than trading expenses are deducted from gross-of-fees returns, whether any fees other than trading expenses and management fees are deducted from net-of-fees returns, the fee schedule, and a measure of internal dispersion are all required disclosures for compliance with the GIPS standards.

CFA Level III
"Global Investment Performance Standards," Philip Lawton
Sections 3.11, 3.12, and 3.13

60. Regarding Exhibit 1, which item is *least likely* an error in the presentation?

A. Note 3
B. Composite percentage of firm assets
C. Three-year standard deviation

Answer = B

The annualized three-year *ex post* standard deviation of monthly returns must be presented for both the composite and the benchmark for each annual period after 1 January 2011. Firms are required to disclose that policies for valuing portfolios, calculating returns, and preparing compliant presentations are available upon request.

CFA Level III
"Global Investment Performance Standards," Philip Lawton
Sections 3.11, 3.12, and 3.13