CFA Societies Australia

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31 July 2018

Dr. Mark Brimble
Acting Managing Director
Financial Adviser Standards and Ethics Authority
Australia

Dear Dr. Brimble,

Re: Consultation Paper 3: Financial Adviser Examination

On behalf of the CFA Institute and CFA Societies Australia (which includes CFA Society Sydney, CFA Society Melbourne and CFA Society Perth), we once again welcome the opportunity to comment on the Financial Adviser Standards and Ethics Authority's ("FASEA") Consultation Paper 3: Financial Adviser Examination (hereafter the "Paper").

We represent the views of investment professionals before standard setters, regulatory authorities and legislative bodies worldwide on issues that affect the practice of financial analysis and investment management, education and licensing requirements for investment professionals. We represent these professionals on issues that affect the integrity and accountability of global financial markets.

This letter provides:

- A summary of CFA's position on FASEA's proposed Code of Ethics and Education Pathways;
- Our feedback on FASEA's proposed adviser examination;
- Learning Outcome Statements of the CFA Program Level III examination that cover the topic of *Behavioural Finance;*
- The exam format of the CFA Program; and
- Sample CFA Program exam questions.

CFA's position on FASEA's proposed Code of Ethics and Education Pathways

In the past two months, we have submitted to your office the following submissions:

- Our comment on FASEA's proposed Code of Ethics for Financial Advisers on 1 June 2018; and
- Our comment on FASEA's Proposed Guidance on Education Pathways for Existing Advisers on 28 June 2018.

Please refer to our previous submissions for an overview of CFA Institute and of CFA Societies Australia, and background on the CFA charter.

In summary, we support FASEA's introduction of a Code of Ethics, although we believe the Code would be further improved if FASEA adopted CFA's recommendations set out in our letter dated 1 June 2018.

We also believe in principle that FASEA's proposed education pathways are appropriate for the Australian financial planning and investment advice industry generally. However, we strongly recommend that FASEA recognise the CFA charter as one of the approved foreign qualifications in accordance with section 921V of the Corporations Amendment (Professional Standards of Financial Advisers) Act 2017.

In addition, given the depth of study in the investment field and a significant emphasis on behavioural finance in the CFA program, under the current guidelines we have recommended that CFA charterholders only be required to complete a bridging course on FASEA's proposed Code of Ethics and Chapter 7 of the Corporations Act. We also recommend that these elements be combined, given that the fiduciary responsibility and obligations of financial advisers are the key focus of Chapter 7.

Our support for this proposal is based on the requirement that charterholders already hold a Bachelor's degree, have a minimum of four years of relevant work experience, have studied the depth and breadth of the three-year CFA curriculum with significant relevance to the mission of FASEA, and be signatories to the ongoing CFA Code of Ethics and Continuous Professional Development (CPD) requirements.

Our feedback on FASEA's proposed examination

Section 3 Exam Scope & Curriculum

S3.1 Do you agree with the scope of the proposed examination? If not, why not?

S3.2 Is the proposed scope of the exam appropriate for new entrants? If not, why not?

S3.3 Is the proposed scope of the exam appropriate for existing advisers? If not, why not?

- In principle, we agree with the scope of the proposed examination. We believe that a sufficient understanding of relevant regulations (the Corporations Act, with emphasis on Chapter 7 – Financial services and markets), and practical knowledge of financial advice, which includes behavioural finance and the suitability of advice, are appropriate areas for examination.

- However, we recommend FASEA develop a detailed curriculum over the five areas on which candidates will be examined and provide supporting materials. We consider it essential that candidates fully understand the learning outcomes on which they will be examined and what each of the five areas fully encompasses.

- In this respect, we recommend that FASEA consider adopting the CFA's learning outcomes on behavioural finance (see Appendix I).

- As the global organisation that is a champion for ethical behaviour in investment markets, we agree with FASEA that a thorough understanding of the FASEA Code of Ethics is a core component of the curriculum. Please also refer to our letter dated 1 June 2018 for our comments on the practical application of the proposed FASEA Code of Ethics.

- FASEA considers the proposed examination to be an essential component of the educational qualifications and standards that all financial advisers are required by law to achieve before they can provide personal financial advice to retail clients. Therefore, we consider the proposed scope of the exam is appropriate for both new entrants and existing advisers.

- Going forward, when FASEA develops the CPD Standard, the Authority should consider including the scope of the proposed five examination areas in their CPD program to reinforce learnings in these areas.

- While we understand FASEA may publish a recommended reading list to guide candidates preparing for the examination, we provide in the appendices of this letter the Learning Outcome Statements of the CFA Program Level III examination that cover the topic of *<u>Behavioural Finance</u>* for your reference. Despite this being a competency exam, the CFA Institute recommends following a similar approach to guide candidates via appropriate learning outcomes / readings.

Section 4 Exam Format

S4.1 Is the type and mix of questions proposed for the exam appropriate (i.e. selected vs written)? If not, why not?
S4.2 Is the curriculum proposed to be covered appropriate? If not, why not?
S4.3 Is the proposed duration of the exam appropriate? If not, why not?
S4.4 Is the proposed overall scaled pass mark of 65% and the additional individual knowledge area pass requirements appropriate? Should the Code of Ethics knowledge area pass mark be set at 75% or other level and the other knowledge areas at 50% or other level?

- In general, we consider the curriculum proposed to be covered appropriate. In our CFA Program, the examination weight of Ethical and Professional Standards is around 10% to 15% of our examination at all three levels, which is consistent with FASEA's proposal.

- CFA recommends the proposed duration of any exam not exceed three hours to ensure candidates stay alert during the exam.

- If the requirement is for a four-hour exam, we would recommend FASEA split the exam up into two separate exams, each two hours long. We would propose that one exam test candidates' knowledge on the Corporations Act (Chapter 7) and ethics and a second exam cover candidates on financial advice construction, behavioural finance and the application of financial planning advice and ethics.

- On 23 June 2018, CFA Institute administered the global CFA examination with over 227,000. In Australia, more than 6,500 candidates sat for the examination in three test centre locations: Sydney, Melbourne and Perth. Each level of the exam consists of two 3-hour sessions, one in the morning and one in the afternoon. The format, and the typical number of questions at each level, are as follows:

Level	**Format**	**Typical Number of Questions**
I	Multiple Choice Stand-alone multiple choice questions	240 Questions (120 each in AM and PM) 360 total points (1 point = 1 minute) Average question = 1½ minutes
II	Item Sets 1-2 pages cases (vignettes) with 6 related multiple choice questions (item sets)	20 Item Sets (10 each in AM and PM); 6 questions each item set = 120 questions 360 total points Average question = 3 minutes
III	Constructed Response Discussion-type (essay) and problem solving questions Item Sets	Variable number of constructed response questions (has ranged from 10 to 18) for 180 points in AM 10 item sets in PM for 180 points

We attach the following documents in the appendices for your information:
- Formatting conventions used for CFA Program Level I exams
- Sample CFA Program Level II Item-Set Questions
- Sample CFA Program Level III Item-Set Questions
- CFA Program Level III essay questions, including actual previous exam questions.

- The CFA Program does not have a minimum passing score (MPS). After each exam administration, the CFA Institute Board of Governors sets the MPS for each level. This method ensures fairness to candidates across administrations as the difficulty of each exam is taken into account when setting the MPS. CFA Institute does not release the MPS or individual candidate scores. The historical pass rate for the CFA Program is as follows:

	Level I	Level II	Level III
June 2017	43%	47%	54%
2008-2017	40%	44%	52%

- The CFA Program also does not have a separate MPS for our Ethics and Professional Standards topic area. However, we support FASEA's proposal to set a higher pass mark for Code of Ethics knowledge.

Section 5 Sitting the Exam and Delivery Mode

S5.1 Is the proposed number of re-sits appropriate? If not, why not?

S5.2 Is the proposed mode and frequency of delivery appropriate? If not, why not?

- The CFA exams (Levels I, II, and III) are offered every June at test centres around the world. The Level I exam is also offered in December. The exams must be passed in the correct sequence. The exams are offered in English only.

- We support FASEA's intention to offer the exam multiple times each year for new and existing advisers in person, with the possibility of digital exams for those in regional and remote areas.

- We recognise the challenges that FASEA faces with the volume and immediacy of this exam. However, we recommend against monthly exams, which would require a high level of support and administration, including exam implementation, marking papers and delivering results to candidates. We would recommend bi-annual or quarterly exams, at a maximum. Therefore, the construction of the questions will be an important consideration. A potential solution may be the use of the multiple choice format initially, leading to the addition of short answer questions over time.

- As this is a competency exam, we do not believe a limit of two re-sits should be imposed. Further discussion is required around the implications of failure and the timing involved. Combined with the other FASEA guidelines, we see no reason why unlimited re-sits should not be available to candidates given the importance of passing the exam for their ability to practise financial planning and gain their livelihoods. It is also important to consider the proposed timing of the education requirements (2024) and exam (2021) for existing advisers. Over time, the content of the exam will be covered, but initially the ability to complete the education program and the implications of exam failure are not insignificant for existing advisers.

Section 7 Additional Needs

S7.1 Are the proposed arrangements in relation to additional needs appropriate? If not, why not?

- We support FASEA's intentions to offer additional facilities for those advisers with disability or other special needs such as mobility, visual or hearing impediments.

- CFA Institute also grants disability accommodations to candidates whose physical or other impairment substantially limits, as compared to the general population, their ability to sit the exam. Please refer to the following link to our website for the details:
https://www.cfainstitute.org/programs/cfa/exam/disability-accommodations

Section 8 Special Considerations

S8.1 Are the proposed arrangements in relation to special considerations appropriate? If not, why not?

- CFA Institute believes that applications for special considerations should be considered by FASEA if exceptional circumstances arise that are beyond a candidate's control. Candidates should be given the opportunity to re-sit the exam at the next available date if they can provide evidence of exceptional circumstances.

We would be pleased to discuss our comments in greater detail, or to provide any other assistance that would be helpful. If you have any questions, please do not hesitate to contact us at exec@cfas.org.au.

Yours sincerely,

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Director, Government and Regulator Relations
Asia Pacific, CFA Institute

Mr. Ganesh Suntharam, CFA
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CFA Society Sydney

Mr. Graeme Bibby, CFA
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Mr. Robert Huth, CFA
President
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Appendix 1: Selected Learning Outcome Statements of CFA Program Level III exam that cover the topic of Behavioural Finance

Behavioural finance is introduced in the first study session on portfolio management because all market participants, regardless of expertise or experience, may be subject to behavioural biases. Behavioural finance provides insight into how emotional biases and cognitive errors may influence individuals' perceptions and investment decisions. As a consequence, knowledge of behavioural biases may help in understanding client goals, in constructing investment portfolios, and in identifying inconsistencies in investment decision making. Behavioural finance also provides insights into issues such as market anomalies. The readings propose that integration of behavioural and traditional finance may lead to a better outcome than either approach used in isolation.

Reading: The Behavioural Finance Perspective

The candidate should be able to:

a. contrast traditional and behavioural finance perspectives on investor decision making;
b. contrast expected utility and prospect theories of investment decision making;
c. discuss the effect that cognitive limitations and bounded rationality may have on investment decision making;
d. compare traditional and behavioural finance perspectives on portfolio construction and the behaviour of capital markets.

Reading: The Behavioural Biases of Individuals

The candidate should be able to:

a. distinguish between cognitive errors and emotional biases;
b. discuss commonly recognized behavioural biases and their implications for financial decision making;
c. identify and evaluate an individual's behavioural biases;
d. evaluate how behavioural biases affect investment policy and asset allocation decisions and recommend approaches to mitigate their effects.

Reading: Behavioural Finance and Investment Processes

The candidate should be able to:

a. explain the uses and limitations of classifying investors into personality types;
b. discuss how behavioural factors affect adviser–client interactions;
c. discuss how behavioural factors influence portfolio construction;
d. explain how behavioural finance can be applied to the process of portfolio construction;
e. discuss how behavioural factors affect analyst forecasts and recommend remedial actions for analyst biases;
f. discuss how behavioural factors affect investment committee decision making and recommend techniques for mitigating their effects;
g. describe how behavioural biases of investors can lead to market characteristics that may not be explained by traditional finance.

Formatting Conventions Used for Level I Exams

Item Construction

Each item on the Level I multiple choice exam consists of a stem (question, statement, and/or table) and three choices, A, B, and C.

Two basic formats are used:

1. Stems using sentence completion with three unique choices
2. Stems phrased as questions with three unique choices

Example 1 (Stem using sentence completion)

An analyst suspects that a particular company's U.S. GAAP financial statements may require adjustment because the company uses take-or-pay contracts. The *most likely* effect of the appropriate adjustments would be to increase that company's
A. return on assets.
B. debt-to-equity ratio.
C. interest coverage ratio.

Example 2 (Stem phrased as question)

An analyst suspects that a particular company's U.S. GAAP financial statements may require adjustment because the company uses take-or-pay contracts. Which of the following is *most likely* to increase as a result of the appropriate adjustments being made to that company's financial statements?
A. Return on assets.
B. Debt-to-equity ratio.
C. Interest coverage ratio.

Item Stems

The Level I CFA exam does not use **except**, **true**, or **false** in item stems and avoids the use of **not** in item stems whenever possible. When appropriate, stems will include one of the following qualifiers: most likely, least likely, best described, most appropriate, most accurate, least appropriate, or least accurate. Each stem supports only one item on the exam.

Answer Choices

The Level I CFA exam **does not use** any of the following choices: all of the above, none of the above, A and B only, B and C only, cannot determine, cannot calculate, or not enough information to determine.

Choices consisting of words or sentences are typically ordered from shortest to longest; choices that are quantitative are ordered from the smallest number to largest number. The choices agree grammatically with the stem; language common to all choices is placed in the stem.

Sample Level II Item-Set Questions

Questions 1 through 6 relate to Ethical and Professional Standards.

SMC Case Scenario

Ian Sherman, CFA, is a portfolio manager at SMC, an investment advisory firm which offers investment products and services to individual and institutional clients. SMC has adopted the CFA Institute Research Objectivity Standards and implemented policies in compliance with the Standards.

All of SMC's investment professionals have earned CFA charters. Sherman tells prospective clients, "The CFA charter is the highest credential in the global investment management industry. As charterholders we are committed to the highest ethical standards. Completion of the program has dramatically improved the team's portfolio management knowledge and their ability to achieve better performance results."

Sherman has earned a reputation for consistently outperforming the market. Over the long run, his mutual funds have outperformed their respective market benchmarks by a wide margin. For the past 12 months the funds have slightly underperformed the benchmarks. Some clients have noticed that Sherman's fund performance information has not been updated on the advisor's website in the past six months. When clients inquire about fund performance, Sherman provides them with accurate updated information.

Annette Martineau, CFA, works as an analyst for Sherman and presents her recently completed research report and sell recommendation on Muryan Corporation, which is held in one of Sherman's funds to SMC's Investment Committee. After much debate about the company and its prospects, the committee reaches a consensus recommendation that is contrary to Martineau's. Martineau informs Sherman, "I accept that the committee's recommendation has a reasonable basis, but I strongly believe that my recommendation is more appropriate. I have been diligent in my research and have a deeper understanding of the industry and its competitive factors."

The following week, Martineau prepares for an investment conference, open to the general public but typically attended only by investment professionals, by reviewing SMC's policies regarding public appearances. The policies state:

1) Employees should remind audience members to judge the suitability of the investment in light of their own unique circumstances.
2) Employees should make full disclosure of all conflicts of interest, both their own and those of the firm.
3) Employees may not provide research reports to audience members. Research reports are reserved exclusively for SMC clients.

During the conference, private equity firm Caruso Limited announces a takeover bid for Muryan. Immediately, Muryan shares increase 30 percent in value. Martineau is skeptical of the transaction as she doubts that the Caruso partners fully understand the changing industry dynamics of the target firm. She hypothesizes that they would cancel the deal if they did. Concerned that Caruso will eventually cancel the deal, Martineau drafts an updated report and reiterates her sell recommendation on Muryan. Since SMCs Investment Committee had overturned her previous sell recommendation on Muryan she goes into great detail as to why she believes Caruso will not complete the deal. She emails the recommendation to Sherman the next afternoon.

That evening, Martineau considers what action to take regarding the 5,000 shares of Muryan held in her husband's personal account. The firm's policy on personal investments and trading requires that Martineau receive approval from the compliance department in advance of all trades in securities in subject companies in her assigned industry. She is concerned that if Sherman accepts her recommendation to liquidate all fund holdings of Muryan, the stock price will drop before she receives approval from the compliance department. Martineau decides to use derivatives to hedge her husband's position because these types of trades do not require advance approval from the compliance department.

The next morning, on Martineau's recommendation, Sherman's trader sells all of SMC's mutual fund's entire positions of Muryan for a sizable gain. Martineau hedges her husband's position.

Several weeks later, as Martineau had hypothesized, Caruso cancels the deal and Muryan's stock price declines 20 percent. Martineau's derivatives position effectively hedges her husband's position in the stock.

Sherman learns that a wealthy investor in the fund might liquidate his holdings due to doubts about suitability and economic forecasts. Sherman carefully reviews the client's investment objectives, and informs the client, "You should not sell. Our fund is still suitable for you. You have been invested with us throughout the past 12 years and I urge you to continue to stay fully invested. I was just looking at the investment record of a former client who happens to be a relative of mine, Karoll Reeves, who has traded in and out of our funds during that same period. Her returns have badly lagged yours." The client elects to maintain his holdings in Sherman's fund.

A month later, Martineau leaves SMC and starts the Galaxy hedge fund with Anjali Shah as her partner. The first client to commit to the hedge fund instructs the Galaxy partners to direct its trades through RLB Securities. RLB charges higher-than-average fees, but provides some unique informational services to investors. In return for receiving Galaxy's trading business, RLB promises to refer potential clients to Galaxy. Shah tells Martineau "A larger client base will create economies of scale and will eventually allow Galaxy to lower its expenses for all clients." Martineau agrees. She and Shah explain the directed brokerage arrangement carefully to prospective clients. They require each client to sign a statement that reads, "It is not necessary for Galaxy to seek best price and execution, and I am aware of the consequence for my account. I consent to Galaxy's trades being executed by RLB Securities."

1. In which of the following actions does Sherman *most likely* comply with the requirements and recommendations of the CFA Institute Standards of Professional Conduct? When he:

   A. references the CFA program and designation.
   B. provides performance information on the advisor's website.
   C. references the enhanced portfolio management skills of his team.

2. According to CFA Institute Standards, Martineau's *best* immediate course of action regarding her initial research report and recommendation on Muryan is to:

   A. leave her name on the report and take no further action.
   B. leave her name on the report and document her difference of opinion.
   C. issue her own independent recommendation since she has a reasonable basis.

3. Which of SMC's policies regarding public appearances is *least likely* consistent with both the requirements and recommendations of the CFA Institute Research Objectivity Standards?

   A. Statement 1.
   B. Statement 2.
   C. Statement 3.

4. Martineau's actions regarding her husband's account *most likely* violate the CFA Institute Research Objectivity Standards because she:

   A. did not receive advance approval from the compliance department for trades in her assigned industry.
   B. trades within the restricted trading period of at least 5 calendar days prior to and after issuing a research report.
   C. should seek to ensure that trades for immediate family members are not done in advance of or disadvantage investing clients.

5. Concerning the client who wants to liquidate his holdings, which of the following CFA Institute Standards is *most likely* violated by Sherman?

   A. Confidentiality.
   B. Conflict of interest.
   C. Communication with client.

6. Which of the following actions correctly states why Martineau's relationship with RLB Securities would *most likely* violate CFA Institute Standards?

   A. Galaxy is prohibited from referring brokers to any client.
   B. Galaxy fails to explain the consequences of average quality execution.
   C. Galaxy should trade client accounts through RLB only if the accounts receive best price and execution.

Questions 7 through 12 relate to Financial Statement Analysis

Bobby Lee Case Scenario

Bobby Lee, CFA, is an equity analyst for the U.S. investment management firm Dumas Freres. Dumas Freres holds a substantial position in Skylark Industries, a U.S.-based company. In reviewing the position, Lee decides to look at how employee benefits and stock option compensation have affected the financial statements. In 2006, Skylark adopted SFAS No. 158 the 2006 standard on pension accounting.

First he collects information regarding Skylark's pension plan (Exhibit 1) and pension plan assumptions (Exhibit 2). Lee specifically wants to consider whether Skylark is using certain assumptions to minimize its:

1. Projected Benefit Obligation (PBO) at year-end 2008, or,
2. pension related compensation expense for 2008.

Exhibit 1
Selected Skylark Pension Plan Data
as of 31 December (U.S.$ millions)

Funded Status of the Plan	**2008**	**2007**
Benefit obligation at end of the year (PBO)	972	902
Fair value of plan assets at beginning of the year	514	430
Actual return on plan assets	56	54
Employer/Employee contributions	78	72
Benefits paid	-44	-42
Other changes to plan assets		
Fair value of plan assets at end of the year	604	514
Funded status	-368	-388
Unrecognized net loss	200	224
Unrecognized prior service cost	7	10
Components of net periodic benefit cost		
Service cost	60	45
Interest cost	54	47
Expected return on plan assets	-51	-43
Other amounts recognized	27	13
Net periodic benefit cost	$90	$62

Exhibit 2
Selected Skylark Pension Plan Assumptions

Pension plan assumptions and other information	**2008**	**2007**
Expected return on assets	10.0%	10.0%
Discount rate for obligations	6.0%	5.5%
Expected rate of compensation increases	3.0%	2.5%
Actual return on assets	10.9%	12.6%
Vesting Period	4 years	3 years

Next, Lee collects the following information about Skylark's executive stock option compensation plan:

1. On 1 January each year, Skylark grants senior executives 1,200,000 options with a vesting period of four years.
2. The exercise price of the options is set at 140 percent of the closing stock price on the grant date.

Lee is considering whether Skylark is using certain assumptions (Exhibits 3 and 4) to minimize its stock compensation expense in 2008.

Exhibit 3
Selected Skylark Stock Option Data

	2008
Fair value of options at grant date, 1 January 2008	$3.25
Exercise price of options	140% of closing stock price on grant date
# of options granted	1,200,000
Vesting period	4 years
Time to expiry	10 years
Basis of option valuation	Black-Scholes model

Exhibit 4
Selected Share Price Information and Option Valuation Assumptions as at 1 January,

	2008	**2007**
Share Price	$11.15	$10.00
Dividend yield	1.85%	1.25%
Volatility	34%	32%
Risk-free rate	5%	4%

7. With regard to his concern about the PBO assumptions at the end of 2008 (Exhibit 2), Lee should focus on the disclosures related to the:

   A. discount rate.
   B. expected return on plan assets.
   C. expected rate of compensation increases.

8. Under SFAS No.158, the pension liability recognized on the balance sheet ($ millions) at 31 December 2008 is *closest* to:

   A. 161.
   B. 368.
   C. 972.

9. Which of the following would *best* support Lee's concern about the pension related compensation expense in 2008? The change in the:

   A. discount rate.
   B. vesting period.
   C. actual return on assets.

10. The 2008 economic pension expense ($ millions) is *closest* to:

    A. 58.
    B. 63.
    C. 85.

11. The 2008 compensation expense ($ millions) related to the stock options issued in 2008 is *closest* to:

    A. 0.390
    B. 0.975.
    C. 1.338.

12. Which of the following would *best* support Lee's concern about the stock related compensation expense in 2008?

    A. The risk-free rate.
    B. The dividend yield.
    C. The share price volatility

Questions 13 through 18 relate to Equity Investments

Skate-O-Rama Case Scenario

Charville Securities
Roxanne Bouvier, CFA

International/Canada
Recreation
6 March 2009

Skate-O-Rama, Inc. (SKATE)
Price: $36.00 CAD 12-Month Price Objective: $45.00 CAD
Skating on Thin Ice? BUY

Company Description

Skate-O-Rama is Canada's largest owner and operator of recreational ice facilities and the only one that is publicly traded. In addition to ice rinks, their facilities all contain sports bars and restaurants that overlook the ice, and retail stores that sell equipment and clothing. The company generates revenue from three sources: in-house skating programs (71 percent of revenues), food and beverage operations (20 percent), and retail stores (9 percent). The company's in-house programs focus on skating lessons, youth and adult hockey leagues, multi-sport day camps, and sports tournaments.

Visit with Skate-O-Rama management reinforces our Buy rating

After participating in a publicly held conference call, we are reiterating our Buy recommendation and consider SKATE our top equity selection for 2009. The company's pursuit of both cost leadership and differentiation strategies has enabled it to charge premium prices for its in-house skating programs, while at the same time lowering operating costs through economies of scale.

Based on our analysis of industry structure, the competitive forces influencing the industry are: low barriers to entry, intense rivalry among competitors, weak bargaining power of buyers (customers), and strong bargaining power of suppliers. However, a key factor contributing to SKATE's profitability is management's continued ability to capture the value that they create for customers. Therefore, we have a high degree of confidence in both our revenue projections and our above-consensus EPS estimates for 2010 and 2011 (Exhibits 1 and 2).

Three important conclusions after the conference call:

- In 2009 enrollments in in-house hockey programs and figure and speed skating classes are increasing.
- Management's development and delivery of high quality programming has had a beneficial impact on food and beverage revenues and retail sales.
- Management plans to continue to expand geographically, by acquiring individually owned ice rinks and converting them into recreational ice sports arenas by redesigning the facilities (adding restaurants, bars, and retail stores) and developing skating programs.

We view SKATE as undervalued with strong future growth potential

We believe our estimate of a three year cumulative annual growth rate (CAGR) in EPS provided in Exhibit 1 is conservative due to our expectations of: a) 10 percent growth in program enrollment; b) 12 percent growth in food and beverage revenues; c) an 8-10 percent increase in retail sales per square foot; and d) 40-60 basis points of annual operating margin improvement that reflects economies of scale and improved product pricing.

We believe that SKATE will continue to generate a positive franchise value that will accrue to the existing stockholders. Using a franchise value approach and computing an intrinsic price-earnings ratio, we believe that SKATE's current stock price does not fully reflect the present value of the company's future investment opportunities and the return levels associated with these opportunities. Therefore, we expect SKATE's price-earnings multiple to expand further as the market revalues the company in the context of its greater size, earnings power, and ability to create shareholder value.

Price Objective & Risk

We are reiterating our Buy recommendation on SKATE with a 12-month price objective of $45. This assumes that SKATE trades at 16.0X our 2010 estimated EPS of $2.25 and 17.3X our 2011 estimated EPS of $2.60. Risks to our price objective include: a slowdown in consumer spending and a decline in disposable income.

If the above two risk factors become severe, the company may experience no real growth in earnings. In that event, as SKATE can pass along only 60 percent of inflation effects to its customers, our P/E estimates and 12-month price objective for the stock might not be realized.

Exhibit 1
Estimates and Assumptions

	Skate-O-Rama	Recreation Industry Average
Estimated 2010 ROE	18.0%	20.0%
Estimated 2011 P/E	16.0X	14.0X
Expected EPS Growth Rate	15.0%	12.0%
Dividend Payout Ratio	20.0%	15.0%
Nominal Required Rate of Return	15.0%	---
Expected Inflation	5.0%	5.0%

Exhibit 2
Selected Financial Data For the Year Ending 31 December 2008
(In CAD$ millions)

	Skate-O-Rama	**Recreation Industry Average**
Revenue	46.00	54.00
Earnings before interest and taxes	6.00	9.00
Earnings before taxes	4.75	5.75
Net Income	2.88	3.00
Total assets (average)	123.00	145.00
Total equity (average)	16.00	15.00

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13. Based on Bouvier's analysis of the industry structure, SKATE's ability to capture value is *most likely* due to:

    A. barriers to entry.
    B. bargaining power of buyers.
    C. bargaining power of suppliers.

14. Based on Exhibit 2 and the DuPont Model, Skate-O-Rama's lower 2008 return on equity compared to the recreation industry is *best* explained by:

    A. net profit margin.
    B. financial leverage.
    C. operating leverage.

15. Based on Exhibit 2 and the DuPont Model, Skate-O-Rama's higher 2008 net profit margin compared to the recreation industry is *best* explained by:

    A. pretax margin.
    B. interest burden.
    C. operating margin.

16. Using Bouvier's assumptions in Exhibit 1, Skate-O-Rama's franchise P/E as of 31 December 2008 is *closest* to:

    A. 16.67.
    B. 17.79.
    C. 26.67.

17. Using Bouvier's assumptions in Exhibit 1 and the franchise value approach, Skate-O-Rama's intrinsic P/E as of 31 December 2008 is *closest* to:

A. 20.0.
B. 33.3.
C. 42.7.

18. Considering the two risk factors and the inflation related effects, the *most* accurate estimate of SKATE's intrinsic P/E ratio using prospective earnings is:

A. 7.69.
B. 8.33.
C. 12.50.

Answers are provided beginning on the next page.

<u>Answers to Sample Level II Item-Set Questions</u>

SMC Case Scenario

1. In which of the following actions does Sherman *most likely* comply with the requirements and recommendations of the CFA Institute Standards of Professional Conduct? When he:

   A. references the CFA program and designation.
   B. provides performance information on the advisor's website.
   C. references the enhanced portfolio management skills of his team.

   Answer: A

   Guidance for Standards I-VII, CFA Institute
   2009 Modular Level II, Volume 1, pp., 29-31, 64, 105-7
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

   Sherman's comments about his staff and the CFA Program are all acceptable,

2. According to CFA Institute Standards, Martineau's *best* immediate course of action regarding her initial research report and recommendation on Muryan is to:

   A. leave her name on the report and take no further action.
   B. leave her name on the report and document her difference of opinion.
   C. issue her own independent recommendation since she has a reasonable basis.

   Answer: B

   Guidance for Standards I-VII, CFA Institute
   2009 Modular Level II, Volume 1, pp. 80-83, example 5.
   Study Sessions 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

   Martineau need not remove her name from the report, but she should document the difference of opinion.

3. Which of SMC's policies regarding public appearances is *least likely* consistent with both the requirements and recommendations of the CFA Institute Research Objectivity Standards?

   A. Statement 1.
   B. Statement 2.
   C. Statement 3.

   Answer: C

   CFA Institute Research Objectivity Standards, CFA Institute
   2009 Modular Level II, Volume 1, p. 160
   Study Sessions 1-4-b
   Critique company policies and practices related to research objectivity and distinguish between changes required and changes recommended for compliance with the Research Objectivity Standards.

   The CFA Institute Research Objectivity Standards recommend that firms provide full research reports on the subject companies discussed to members of the audience at a reasonable price. At a minimum, the covered employee should disclose whether a written research report is available to members of the audience who are not clients of the firm, the approximate cost, and how a listener might acquire the report. Firms should make copies of the full research report available for purchase or review; for example via the firm's website.

4. Martineau's actions regarding her husband's account *most likely* violate the CFA Institute Research Objectivity Standards because she:

   A. did not receive advance approval from the compliance department for trades in her assigned industry.
   B. trades within the restricted trading period of at least 5 calendar days prior to and after issuing a research report.
   C. should seek to ensure that trades for immediate family members are not done in advance of or disadvantage investing clients.

   Answer: C

   CFA Institute Research Objectivity Standards, CFA Institute
   2009 Modular Level II, Volume 1, pp. 158-159.
   Study Sessions 1-4-b
   Critique company policies and practices related to research objectivity and distinguish between changes required and changes recommended for compliance with the Research Objectivity Standards.

The CFA Institute Research Objectivity Standards requires firms to ensure that covered employees and members of their immediate families do not have the ability to trade in advance of or otherwise disadvantage investing clients relative to themselves of the firm.

5. Concerning the client who wants to liquidate his holdings, which of the following CFA Institute Standards is *most likely* violated by Sherman?

   A. Confidentiality.
   B. Conflict of interest.
   C. Communication with client.

   Answer: A

   Guidance for Standards I-VII, CFA Institute
   2009 Modular Level II, Volume 1, pp. 67, 84, 89
   Study Sessions 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

   The Standards prohibit Sherman from revealing confidential information about clients or former clients, including use of the client's name.

6. Which of the following actions correctly states why Martineau's relationship with RLB Securities would *most likely* violate CFA Institute Standards?

   A. Galaxy is prohibited from referring brokers to any client.
   B. Galaxy fails to explain the consequences of average quality execution.
   C. Galaxy should trade client accounts through RLB only if the accounts receive best price and execution.

   Answer: C

   Guidance for Standards I-VII, CFA Institute
   2009 Modular Level II, Volume 1, p. 50
   Study Sessions 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.

   According to Standard III (A) Loyalty, Prudence, and Care, members must act for the benefit of their clients and place their clients' interests before their own. Martineau puts her own interests ahead of that of her clients when directing brokerage in exchange for client referrals. Martineau may trade through RLB only if the accounts receive best price and execution and the practice (i.e. the referral arrangement) is disclosed to clients.

7. With regard to his concern about the PBO assumptions at the end of 2008 (Exhibit 2), Lee should focus on the disclosures related to the:

   A. discount rate.
   B. expected return on plan assets.
   C. expected rate of compensation increases.

   Answer: A

   "Employee Compensation: Post-Retirement and Share-Based," Elaine Henry, CFA, and Elizabeth Gordon
   2009 Modular Level II, Volume 2, pp. 93-98
   Study Session 6-23-b,
   Explain the measures of a defined-benefit pension plan's liabilities, including the projected benefit obligation, accumulated benefit obligation, and vested benefit obligation.

   Lee's concern is that the firm may be using certain assumptions which minimize the PBO in 2008. The increase in the discount rate from 5.5% to 6.0% would reduce the present value of the pension liability (PBO) and the service cost. Expected return on assets affects the pension expense, but not the obligation, and has not changed. The increase in the expected rate of compensation would increase the PBO, not decrease it.

8. Under SFAS No.158, the pension liability recognized on the balance sheet ($ millions) at 31 December 2008 is *closest* to:

   A. 161.
   B. 368.
   C. 972.

   Answer: B

   "Employee Compensation: Post-Retirement and Share-Based," Elaine Henry, CFA, and Elizabeth Gordon
   2009 Modular Level II, Volume 2, pp. 103-105
   Study Session 6-23-d, f
   Explain the impact on financial statements of international financial reporting standards (IFRS) and U.S. generally accepted accounting principles (U.S. GAAP) for pension and other post-retirement benefits that permit some items to be reported in the footnotes rather than being reflected in the financial statements themselves.

Evaluate the underlying economic liability (or asset) of a company based upon pension and other post-retirement benefit disclosures.

Under SFAS No. 158 the pension liability recognized is the ending pension obligation minus the ending pension assets without any adjustments for unrecognized amounts. 972-604 = 368.

9. Which of the following would *best* support Lee's concern about the pension related compensation expense in 2008? The change in the:

   A. discount rate.
   B. vesting period.
   C. actual return on assets.

   Answer: A

   "Employee Compensation: Post-Retirement and Share-Based," Elaine Henry, CFA and Elizabeth Gordon
   2009 Modular Level II, Volume 2, pp. 93-98
   Study Session 6-23-c
   Describe the components of a company's defined-benefit pension expense and explain the impact of plan assumptions on that pension expense.

   Lee's concern is that Skylark may be minimizing its pension expense through various assumptions. An increase in the discount rate will reduce the present value of the future pension benefits and hence decrease the current service cost. It will increase the interest expense component of pension expense, but typically the decrease in the present value is greater than the increase in the interest component; the exception is when the pension obligation is of a short duration. See Exhibit 7 on page 97. The expected ROA affects the pension expense, not the actual ROA.

10. The 2008 economic pension expense ($ millions) is *closest* to:

   A. 58.
   B. 63.
   C. 85.

   Answer: A

   "Employee Compensation: Post-Retirement and Share-Based," Elaine Henry, CFA and Elizabeth Gordon
   2009 Modular Level II, Volume 2, pp. 103-108
   Study Session 6-23-g

Calculate the underlying economic pension expense and other post-retirement expense (income) based upon disclosures.

The economic pension expense would include service cost plus interest cost less actual return on assets: 60 + 54 – 56 = 58. Alternatively, it is the change in the pension obligation less the change in plan assets adjusted for cash contributions and benefit payments.
[Change in benefit obligation + benefits paid *(non-expense item)*] – [Change in plan assets – (contributions – benefits paid)]
(972-902 + 44) – (604-514 – (78 - 44)) = 58

11. The 2008 compensation expense ($ millions) related to the stock options issued in 2008 is *closest* to:

    A. 0.390
    B. 0.975.
    C. 1.338.

    Answer: B

    "Employee Compensation: Post-Retirement and Share-Based," Elaine Henry, CFA and Elizabeth Gordon
    2009 Modular Level II, Volume 2, pp. 116-119
    Study Session 6-23-i
    Explain the impact on financial statements of accounting for stock grants and stock options, and the importance of companies' assumptions in valuing these grants and options.

    Stock options are measured at their fair value on the date of issue and that amount is expensed over the vesting period (4 years). The fair value = 1,200,000 x 3.25 = $3,900,000. The expense in 2008 = 3,900,000/4 = 975,000

12. Which of the following would *best* support Lee's concern about the stock related compensation expense in 2008?

    A. The risk-free rate.
    B. The dividend yield.
    C. The share price volatility

    Answer: B

    "Employee Compensation: Post-Retirement and Share-Based," Elaine Henry, CFA, and Elizabeth Gordon

2009 Modular Level II, Volume 2, pp. 116-117
"Option Markets and Contracts," Don Chance, CFA
2009 Modular Level II, Volume 6, pp. 149-165
Study Session 6-23-i, 17-62-c, d
Explain the impact on financial statements of accounting for stock grants and stock options, and the importance of companies' assumptions in valuing these grants and options.
Explain the assumptions underlying the Black–Scholes–Merton model and their limitations.
Explain how an option price, as represented by the Black–Scholes–Merton model, is affected by each of the input values (the option Greeks).

The compensation expense is based on the valuation of the stock options at the grant date using the Black-Scholes model. Under Black-Scholes the value of an option is affected by the stock price and exercise price, the stock price volatility, the estimated life of the option, the risk-free rate and the dividend yield. The increase in dividend yield, from 1.25% to 1.85%, would decrease the valuation of the options and hence decrease the related compensation expense. The increase in the other factors would increase the value of the option and the related compensation expense.

Skate-O-Rama Case Scenario

13. Based on Bouvier's analysis of the industry structure, SKATE's ability to capture value is *most likely* due to:

    A. barriers to entry.
    B. bargaining power of buyers.
    C. bargaining power of suppliers.

    Answer: B

    "The Five Competitive Forces That Shape Strategy," Michael E. Porter
    2009 Modular Level II, Volume 4, pp. 202-210
    Study Session 11-38-a
    Distinguish among the five competitive forces that drive industry profitability in the medium and long run.

    Weak bargaining power by buyers would enable Skate-O-Rama to capture the majority of value by maintaining high prices.

14. Based on Exhibit 2 and the DuPont Model, Skate-O-Rama's lower 2008 return on equity compared to the recreation industry is *best* explained by:

A. net profit margin.
B. financial leverage.
C. operating leverage.

Answer: B

"Equity: Concepts and Techniques," Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 173-175
Study Session 11-37-e
Evaluate two common approaches of equity analysis (ratio analysis and discounted cash flow models including the franchise value model) and demonstrate how to find attractively priced stocks by using either of these methods.

The primary factor causing Skate-O-Rama to have a lower ROE than the recreational industry is that the company has lower leverage (Assets/Equity). Skate-O-Rama has a higher net profit margin, almost the same asset turnover, higher return on assets, and lower leverage than the Industry.

ROE = Net Profit margin ×Asset Turnover × Leverage

	Skate-O-Rama	**Industry**
Net Profit Margin (Net Income/Revenue)	2.88/46 = .0626	3.00/54 = .0556
Asset turnover (Revenue/Assets)	46/123 = .3740	54/145 = .3724
Leverage (Assets/Equity)	**123/16 = 7.68**	**145/15 = 9.67**
Return on Equity	2.88/16 = 18.00%	3/15 = 20.00%
Equity Turnover (Revenue/Equity)	46/16 = 2.88	54/15 = 3.60

15. Based on Exhibit 2 and the DuPont Model, Skate-O-Rama's higher 2008 net profit margin compared to the recreation industry is *best* explained by:

A. pretax margin.
B. interest burden.
C. operating margin.

Answer: B

"Equity: Concepts and Techniques," Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 173-175
Study Session 11-37-e
Evaluate two common approaches of equity analysis (ratio analysis and discounted cash flow models including the franchise value model) and demonstrate how to find attractively priced stocks by using either of these methods.

The primary factors causing Skate-O-Rama's net profit margin to be higher than the industry are tax burden and interest burden. Interest burden is measured as EBT/EBIT and tax burden is measured as Net Income/EBT. Higher values imply lower interest burden or tax burden. Since Skate-O-Rama's EBT/EBIT ratio is higher (.7917) than the industry (.6389), it has a lower interest burden. Furthermore, Skate-O-Rama has a lower pretax margin and a lower operating margin.

Net Profit Margin = NI/EBT x EBT/EBIT x EBIT/Revenue

	Skate-O-Rama	**Industry**
Net Profit Margin (Net Income/Revenue)	2.88/46 = .0626	3.00/54 = .0556
Net Income/EBT (tax burden)	2.88/4.75 = .6063	3.00/5.75 = .5217
EBT/EBIT (interest burden)	**4.75/6.0 = .7917**	**5.75/9.0 = .6389**
EBIT/Revenue	6.00/46 = .1304	9/54 = .1667
EBT/Revenue	4.75/46 = .1033	5.75/54 = .1065

16. Using Bouvier's assumptions in Exhibit 1, Skate-O-Rama's franchise P/E as of 31 December 2008 is *closest* to:

A. 16.67.
B. 17.79.
C. 26.67.

Answer: C

"Equity: Concepts and Techniques," Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 176-180
"Discounted Dividend Valuation," John D. Stowe, CFA, Thomas R. Robinson, CFA, Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
2008 Modular Level II, Volume 4, pp. 327-328
Study Session 11-37-e; 11-41-o
Evaluate two common approaches of equity analysis (ratio analysis and discounted cash flow models including the franchise value model) and demonstrate how to find attractively priced stocks by using either of these methods.
Define, calculate, and interpret the sustainable growth rate of a company, explain the calculation's underlying assumptions, and demonstrate the use of the DuPont analysis of return on equity in conjunction with the sustainable growth rate expression.

Franchise Factor = 1/r – 1/ROE = 1/0.15 – 1/0.18 = 1.111
Sustainable Growth Rate = Retention Ratio X ROE = (1 - .20) X .18 = .1440
Growth Factor = g/(r-g) = .1440/(.150 - .1440) = 24.00
Franchise P/E = Franchise Factor X Growth Factor = 1.111 X 24.0 = 26.67

17. Using Bouvier's assumptions in Exhibit 1 and the franchise value approach, Skate-O-Rama's intrinsic P/E as of 31 December 2008 is *closest* to:

A. 20.0.
B. 33.3.
C. 42.7.

Answer: B

"Equity: Concepts and Techniques," Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 176-180
Study Session 11-37-e; 11-41-o
"Discounted Dividend Valuation," John D. Stowe, CFA, Thomas R. Robinson, CFA, Jerald E. Pinto, CFA, and Dennis W. McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 327-328
Evaluate two common approaches of equity analysis (ratio analysis and discounted cash flow models including the franchise value model) and demonstrate how to find attractively priced stocks by using either of these methods.
Define, calculate, and interpret the sustainable growth rate of a company, explain the calculation's underlying assumptions, and demonstrate the use of the DuPont analysis of return on equity in conjunction with the sustainable growth rate expression.

The intrinsic value P/E can be calculated in two ways:
1. Example 3 on p. 180
Intrinsic P/E = Franchise P/E + Tangible P/E = (26.66 + 6.67) = 33.33
Tangible P/E = 1/required rate of return = 1/.15 = 6.67
Franchise Factor = 1/r – 1/ROE = 1/0.15 – 1/0.18 = 1.111
Sustainable Growth Rate = Retention Ratio X ROE = (1 - .20) X .18 = .1440
Growth Factor = g/(r-g) = .1440/(.150 - .1440) = 24
Franchise P/E = Franchise Factor X Growth Factor = 1.111 X 24.0 = 26.66

2. Using the intrinsic P/E ratio formulas on p. 177 and p. 178
Intrinsic P/E = (1 – retention ratio) / (required rate of return – sustainable growth)
Sustainable growth = (retention ratio * ROE) / ((required return – (retention ratio * ROE))
= (1 - .80) / ((.15 – ((1-.20)*.18))) = 33.33

18. Considering the two risk factors and the inflation related effects, the *most* accurate estimate of SKATE's intrinsic P/E ratio using prospective earnings is:

A. 7.69.
B. 8.33.
C. 12.50.

Answer: B

“Equity: Concepts and Techniques,” Bruno Solnik and Dennis McLeavey, CFA
2009 Modular Level II, Volume 4, pp. 180-183, Equation 37-8
Study Session 11-37-f
Analyze the effects of inflation on asset valuation.

Intrinsic P/E using prospective earnings: $P_0/E_1 = 1/[\rho + (1 - \lambda)I]$; $\rho = r - I$
$\rho = 15\% - 5\% = 10\%$;
$P_0/E_1 = 1 / [0.10 + (0.40 \times 0.05)] = 8.33$.

Sample Level III Item-Set Questions

Questions 1 through 6 relate to Ethical and Professional Standards.

Weiying Shao Scenario

Weiying Shao, CFA, is an investment officer employed by Zhang Financial Services. Zhang provides wealth management services solely to high net worth individuals and has adopted the CFA Institute Standards and Asset Manager Code of Conduct.

Shao receives a request from a client asking for an itemized accounting of the actual fees and other costs charged to them for the year. Shao sends the client a document itemizing management fees paid by the client along with an explanation as to how the fees were derived.

Zhang has expanded its services recently to include proprietary mutual funds. Two experienced and respected research analysts were promoted to manage the new mutual funds.

Shao meets with Guohua Xu, a client who holds a diversified portfolio of funds. Traditionally, Shao has invested client assets in long-established funds with strong performance and management continuity. Because he has great respect for Zhang's new products and their portfolio managers, Shao suggests investing a portion of Xu's portfolio in one of the new Zhang funds. He recommends a fund with investment objectives similar to those of Xu. Shao provides performance data based on a simulated application of the fund's approach over the past 18 months. He adds, "The new fund's simulated performance is comparable to the performance of your current holdings over that period."

Several clients ask Shao about hedge funds. After carefully screening for risk and return characteristics, Shao recommends selected hedge funds he finds appropriate for even conservative clients. The funds have had excellent performance so Shao believes they are appropriate despite their three year lock out prevision. He discusses his research and recommendations with a colleague who responds "I don't believe hedge funds are appropriate for any of our conservative clients, especially those with short-term liquidity needs."

Periodically Shao reviews Zhang's confidential proxy voting policy that is disclosed to clients only upon request. The policy directs investment officers to be selective when reviewing proxies, and to avoid spending time reviewing and voting routine proxies. In such cases, Zhang considers the cost involved for the client to be greater than the benefit that the client would receive.

Zhang has strict trade allocation procedures developed in accordance with the CFA Institute Standards and Asset Manager Code of Conduct. The firm distributes copies of the procedures to clients annually. Occasionally, Shao receives notice from the trading desk at the close of the day informing him that his block trades were only partially filled. Recently, when the trading desk could not execute the full $750,000 in stock that he had requested for two accounts, he allocated

$100,000 of the stock to the $5 million dollar private account and the remaining $500,000 of stock to a $25 million dollar institutional account.

During the next month, Zhang's founder is accused by regulatory authorities of a number of violations including misappropriation of client funds. The same day, a team of senior portfolio managers leave Zhang to start their own firm. Zhang instructs its personnel not to discuss either of these developments with current or prospective clients.

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1. Are the fee disclosures made by Shao to his client consistent with the CFA Institute Asset Manager Code of Professional Conduct?

   A. No.
   B. Yes, because Shao disclosed how fees are derived.
   C. Yes, because Shao itemized the management fees paid on the client's behalf.

2. By recommending that Xu switch a portion of his portfolio to a new Zhang fund, does Shao violate any CFA Institute Standards of Professional Conduct?

   A. No.
   B. Yes, because he has a conflict of interest as the new funds are proprietary.
   C. Yes, because the fund data used in the performance comparison was simulated.

3. By recommending hedge funds, does Shao violate any CFA Institute Standards?

   A. No.
   B. Yes, because hedge funds have risk characteristics that are not suitable for conservative investors.
   C. Yes, because the hedge funds recommended are not suitable for conservative investors with short-term liquidity requirements.

4. Is Zhang's proxy voting policy consistent with the requirements and recommendations of CFA Institute Standards and the Asset Manager Code of Conduct?

   A. Yes.
   B. No, because the proxy voting policy should be disclosed to all clients.
   C. No, because voting of all proxies is a part of the management of client investments.

5. When allocating the shares on the partially filled block order does Shao violate any CFA Institute Standards?

   A. No.
   B. Yes, because he fails to disclose the firm's trade allocation policies.
   C. Yes, because he should allocate shares to client accounts only after the order is completely filled.

6. According to the CFA Institute Asset Manager Code of Conduct, Zhang must disclose the information regarding its:

   A. founder only.
   B. team of senior portfolio managers only.
   C. both the founder and the team of senior portfolio managers.

Questions 7 through 12 relate to Risk Management Applications of Derivatives.

Joenia Dantas Case Scenario

Joenia Dantas is a financial risk manager for Alimentos Serra (AS), a Brazilian manufacturer and exporter of soybean-based food products. AS is a privately held corporation, wholly owned by Cesar Serra. Recently, AS took out a R25,000,000, four-year, floating-rate bank loan requiring semi-annual payments of interest based on SELIC (Banco Central do Brasil's overnight lending rate) plus a spread of 4.50 percent and repayment of principal at maturity. Serra believes that interest rates will rise in the near future and worries that AS will be unable to absorb the higher loan costs associated with an increase in rates. Dantas tells him that she will convert the loan to a 10.80 percent fixed rate by entering into the pay-fixed side of a four-year, R25,000,000 notional principal interest rate swap with semi-annual payments that exchanges SELIC for a fixed rate of 10.80 percent. She explains that the swap will act as a hedge for the loan, reducing the company's net cash flow risk and net market value risk.

Discussions with Dantas about using interest rate swaps to reduce risk cause Serra to think about the fixed income portion of his personal investment portfolio, which includes R12.0 million in bonds that have a modified duration of 5.50 years. Serra's beliefs about rising interest rates make him want to reduce the bond portfolio's modified duration to 2.00 years using interest rate swaps. In order to determine the correct swap position, he needs to learn how to calculate the modified duration of a swap. He asks Dantas how to do this. She explains it to him, using the example described in Exhibit 1.

Exhibit 1
Data for Swap Example

Maturity of swap	4 years
Payment structure	semiannual
Fixed rate on swap	10.8%
Duration of 4-year, 10.8% coupon bond	2.91 years

Serra decides to use a swap that has a modified duration of -2.40 years for the pay-fixed side to reduce his bond portfolio's duration to the desired level.

Dantas knows that AS currently needs to borrow an additional R30,000,000 for 5 years to fund its growth. Brazilian credit markets have tightened and it would cost 17.70 percent per year to borrow this amount locally, but AS can obtain a yen-denominated loan at a fixed rate of 9.50 percent. This would expose it to substantial currency risk. A 5-year currency swap is available in which AS would pay interest in real to the counterparty at 12.20 percent and receive interest in yen from the counterparty at 7.10 percent. The current exchange rate is ¥40/R.

In addition to the current needs, in six months AS will enter into a four-year, quarterly payment, R50,000,000 loan to fund local projects. Dantas expects to borrow these funds at a floating rate and convert the loan to fixed using an interest rate swap. She explains to Serra that AS can commit to a fixed rate of 14.3 percent for the future loan by buying a payer swaption today with an exercise rate of 14.3 percent for a four-year swap with quarterly payments and a notional principal amount of R50,000,000.

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7. Dantas' explanation of her plan to convert the four-year loan from floating to fixed is *most likely*:

   A. correct.
   B. incorrect, because the fixed loan rate will be 15.30%.
   C. incorrect, because the swap should be entered to pay SELIC.

8. Dantas' characterization of the interest rate swap as a hedge for the bank loan is *most likely*:

   A. correct.
   B. incorrect, because the swap increases the cash flow risk of AS.
   C. incorrect, because the swap increases the market value risk of AS.

9. The duration of the interest rate swap described in Exhibit 1 is *closest* to:

   A. -2.41 years.
   B. -2.66 years.
   C. -2.91 years.

10. In order to reduce the duration of his bond portfolio to the desired level, Serra will enter into a pay-fixed swap position with a notional principal *closest* to:

   A. R17.5 million.
   B. R27.5 million.
   C. R42.0 million.

11. If AS enters into the yen-real currency swap with a notional principal of ¥1.2 billion (R40.0 million), net yen interest expense for each year is *closest* to:

   A. ¥28.80 million.
   B. ¥85.20 million.
   C. ¥114.00 million.

12. Dantas' description of the use of a swaption in anticipation of future borrowing is:

    A. correct.
    B. incorrect, because AS should enter into a receiver swaption.
    C. incorrect, because the fixed rate paid on the loan may be less than 14.3%.

Questions 13 through 18 relate to GIPS.

Redlands Case Scenario

Redlands Asset Management (RAM) is an active equity manager specializing in the Asian Pacific region. The firm was founded by Carol Schroeder, CFA at the beginning of 2006, with several members of her family serving as the firm's first clients providing the initial managed assets for the firm.

Schroeder has compiled the information in Exhibit 1 and plans to use it to market RAM to institutional investors.

Exhibit 1
Redlands Asset Management GIPS Compliant Performance
Asia-Pacific Composite. (1/Jan/2006 thru 31/Dec/2008)

Year	**2006**	**2007**	**2008**
Return Gross of Fees	44.8%	66.9%	80.7%
Benchmark Return	43.1%	60.2%	85.6%
# of Portfolios	5	15	33
Composite Dispersion		6.7%	5.1%
Period Ending Total Assets ($ millions)	350	760	1,630
% of Firm Assets	14%	25%	52%

Notes:

1. Performance results are presented gross-of fee so that they represent the return on assets reduced by any trading expenses incurred during the period.
2. The Asia-Pacific composite includes two non-fee-paying accounts of the Schroeder family.
3. A complete list and description of composites and their strategies, including any that have been discontinued within the last five years, is available upon request.
4. Portfolio valuations are computed monthly and are denominated in US dollars.
5. RAM uses cash-basis accounting for the recognition of interest income on its holdings of preferred stock.
6. The pricing source was changed prior to the end of the reporting period because, in management's opinion, performance was not fairly represented. The new source has significantly improved the firm's results.

7. RAM trades securities in illiquid markets with substantial political and economic risks so trades are recorded on a settlement date basis to ensure that these trades have been completed before they are included in performance calculations.
8. The composite presented above has been GIPS verified.

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13. Which of the following performance presentation notes contains an error or omission that is *most likely* to prevent RAM from being in compliance with the GIPS standards?

    A. Composite list availability.
    B. Non-fee paying accounts disclosure.
    C. Disclosure concerning discontinued composites.

14. Which of the following performance presentation notes *most likely* comply with the recommendations and requirements of the GIPS standards?

    A. Pricing source.
    B. Cash-basis accounting.
    C. Returns calculated gross of fees.

15. Which of the following performance presentation notes would *least likely* prevent RAM from being in compliance with the GIPS standards?

    A. Monthly valuations.
    B. Non-fee paying accounts.
    C. Settlement-date accounting.

16. Which of the following concerning fees in RAM's performance presentation *most likely* meets GIPS standards?

    A. Gross of fee labeling.
    B. The firm's fee schedule.
    C. The deduction of any other fees.

17. Does RAM's performance presentation *most likely* meet GIPS standards concerning dispersion?

    A. Yes.
    B. No, the method chosen must be disclosed.
    C. No, the standard deviation must be presented.

18. RAM's verification *most likely* does not meet GIPS standards concerning verification because:

    A. composite verification is not allowed.
    B. the minimum time period has not been met.
    C. the calculation methodology must be disclosed.

Answers are provided beginning on the next page.

Answers to Sample Level III Item-Set Questions

Weiying Shao Scenario

1. Are the fee disclosures made by Shao to his client consistent with the CFA Institute Asset Manager Code of Professional Conduct?

   A. No.
   B. Yes, because Shao disclosed how fees are derived.
   C. Yes, because Shao itemized the management fees paid on the client's behalf.

   Answer: A

   Asset Manager Code of Professional Conduct, CFA Institute
   2009 Modular Level III, Volume 1, p. 215
   Study Session 2-6-b
   Interpret the Asset Manager Code in situations presenting issues of compliance, disclosure, or professional conduct.

   The Asset Manager Code of Conduct requires that managers disclose to each client the actual fees and other costs charged to them, together with itemizations of such charges, when requested by clients. The disclosure should include the specific management fee, incentive fee, and the amount of commissions the manager has paid on the client's behalf during the period plus any other costs such as custodian fees. The Asset Manager Code of Conduct also requires managers to use plain language in presenting information to clients. Shao did not disclose all fees as commissions were left out and a description using plain language was also not used.

2. By recommending that Xu switch a portion of his portfolio to a new Zhang fund, does Shao violate any CFA Institute Standards of Professional Conduct?

   A. No.
   B. Yes, because he has a conflict of interest as the new funds are proprietary.
   C. Yes, because the fund data used in the performance comparison was simulated.

   Answer: A

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level III, Volume 1, pp. 64-66, example 4
   Study Session 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by interpreting the Code and Standards in various situations involving issues of professional integrity.

Shao does not violate the Standards. He recommends a fund with similar investment objectives and discloses the use of simulated data in accordance with Standard III (D). The Standard requires members and candidates to avoid misstating performance or misleading clients. The Code does not prohibit the use of proprietary funds for clients.

3. By recommending hedge funds, does Shao violate any CFA Institute Standards?

   A. No.
   B. Yes, because hedge funds have risk characteristics that are not suitable for conservative investors.
   C. Yes, because the hedge funds recommended are not suitable for conservative investors with short-term liquidity requirements.

   Answer: C

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level III, Volume 1, pp. 60-64
   Study Session 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by interpreting the Code and Standards in various situations involving issues of professional integrity.

   A member or candidate's duty under Standard III(C) is satisfied with respect to a particular investment if they have thoroughly considered the investment's place in the overall portfolio. Although Shao has performed appropriate due diligence prior to making his recommendation in regards to the return/risk characteristics he has not taken into consideration the particular short-term liquidity restrictions posed by the three-year lock up.

4. Is Zhang's proxy voting policy consistent with the requirements and recommendations of CFA Institute Standards and the Asset Manager Code of Conduct?

   A. Yes.
   B. No, because the proxy voting policy should be disclosed to all clients.
   C. No, because voting of all proxies is a part of the management of client investments.

   Answer: B

   "Guidance for Standards I-VII," CFA Institute
   Asset Manager Code of Professional Conduct, CFA Institute
   2009 Modular Level III, Volume 1, pp. 51, 203-204, 216.
   Study Session 1-2-a and 1-6-b

Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by interpreting the Code and Standards in various situations involving issues of professional integrity.
Interpret the Asset Manager Code in situations presenting issues of compliance, disclosure, or professional conduct.

Zhang's policy should be disclosed to all clients. Standard III (A) and the Asset Manager Code of Conduct (Section F.4.h) require members to disclose proxy-voting policies to all clients.

5. When allocating the shares on the partially filled block order does Shao violate any CFA Institute Standards?

   A. No.
   B. Yes, because he fails to disclose the firm's trade allocation policies.
   C. Yes, because he should allocate shares to client accounts only after the order is completely filled.

   Answer: A

   "Guidance for Standards I-VII," CFA Institute
   2009 Modular Level III, Volume 1, p. 57.
   Study Session 1-2-a
   Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by interpreting the Code and Standards in various situations involving issues of professional integrity.

   Shao allocates the shares on a pro rata basis such that each account receives a 2% allocation to the portfolio. To meet the fair dealing requirements of Standard III (B) shares must be allocated among participating client accounts pro rata on the basis of order size.

6. According to the CFA Institute Asset Manager Code of Conduct, Zhang must disclose the information regarding its:

   A. founder only.
   B. team of senior portfolio managers only.
   C. both the founder and the team of senior portfolio managers.

   Answer: C

   Asset Manager Code of Professional Conduct, CFA Institute
   2009 Modular Level III, Volume 1, pp. 214-217.
   Study Session 2-6-a, b

Summarize the ethical responsibilities required by the six components of the Asset Manager Code.
Interpret the Asset Manager Code in situations presenting issues of compliance, disclosure, or professional conduct.

Zhang must disclose both the information concerning the regulatory authorities and the information regarding the team of senior portfolio managers. The Asset Manager Code of Conduct requires that managers disclose material information that reasonable investors would want to know relative to whether or not they would choose to use or continue to use the Manager. In this regard, possible regulatory or disciplinary action taken against the manager or its personnel related to professional conduct would be considered "material". The Code also requires that managers disclose significant personnel or organizational changes that have occurred.

Joenia Dantas Case Scenario

7. Dantas' explanation of her plan to convert the four-year loan from floating to fixed is *most likely*:

   A. correct.
   B. incorrect, because the fixed loan rate will be 15.30%.
   C. incorrect, because the swap should be entered to pay SELIC.

   Answer: B

   "Risk Management Applications of Swap Strategies," Don M. Chance, CFA
   2009 Modular Level III, Volume 5, pp. 444-445
   Study Session 15-44-a
   Demonstrate how an interest rate swap can be used to convert a floating-rate (fixed-rate) loan to a fixed-rate (floating-rate) loan.

   Converting a floating-rate loan to a fixed-rate loan requires entering into a plain-vanilla (fixed-for-floating) interest rate swap on the pay-fixed side. The swap should have the same maturity, the same payment frequency, and the same floating interest rate index as the loan and its notional principal should be equal to principal balance of the loan. The borrower will pay the fixed rate on the swap (here 10.80%) and receive the index (SELIC) from the swap counterparty. The borrower will pay the index (SELIC) plus any spread (4.50%) to the lender. The net, fixed interest rate on the swapped loan is the fixed rate on the swap plus any spread over index on the loan or 10.80% + 4.50% = 15.30% in this situation.

8. Dantas' characterization of the interest rate swap as a hedge for the bank loan is *most likely*:

   A. correct.
   B. incorrect, because the swap increases the cash flow risk of AS.
   C. incorrect, because the swap increases the market value risk of AS.

   Answer: C

   "Risk Management Applications of Swap Strategies," Don M. Chance, CFA
   2009 Modular Level III, Volume 5, pp. 445-446
   Study Session 15-44-c
   Explain the impact to cash flow risk and market value risk when a borrower converts a fixed-rate loan to a floating rate loan.

   The original loan is floating rate. A floating rate loan has very low duration and therefore little market value risk. It might, as Serra suggests, pose a cash flow risk if the firm is not able to handle the increase in loan payments associated with an increase in market interest rates. Using an interest rate swap to convert the loan from a floating rate to a fixed rate reduces the cash flow risk. However, the resulting fixed rate loan has a much higher duration and its market value will therefore fluctuate much more drastically as market interest rates change.

9. The duration of the interest rate swap described in Exhibit 1 is *closest* to:

   A. -2.41 years.
   B. -2.66 years.
   C. -2.91 years.

   Answer: B

   "Risk Management Applications of Swap Strategies," Don M. Chance, CFA
   2009 Modular Level III, Volume 5, pp. 445-446
   Study Session 15-44-b
   Calculate and interpret the duration of an interest rate swap.

   The duration of the pay-fixed position in an interest rate swap is equal to the duration of a floating rate bond with the same payment frequency minus the duration of a fixed rate bond with coupon rate equal to the fixed rate and maturity equal to the swap maturity. The duration of the floating rate bond is, on average, half of the time interval between payments (in this case, half of 0.5 years or 0.25 years.) The duration of the fixed rate bond is given as 2.91 years. 0.25 years-2.91 years = -2.66 years.

10. In order to reduce the duration of his bond portfolio to the desired level, Serra will enter into a pay-fixed swap position with a notional principal *closest* to:

    A. R17.5 million.
    B. R27.5 million.
    C. R42.0 million.

    Answer: A

    "Risk Management Applications of Swap Strategies," Don M. Chance, CFA
    2009 Modular Level III, Volume 5, pp. 447-450
    Study Session 15-44-d
    Determine the notional principal value needed on an interest rate swap to achieve a desired level of duration in a fixed income portfolio.

    When the current duration (DB), the target duration (DT), and the value (B) of the bond portfolio are known and the duration of the swap has been calculated, the notional principal of the appropriate swap (NP) is found as:

$$NP = B\left(\frac{MDUR_T}{MD}\right).$$

In this case, the notional principal is:

$$12,000,000\left(\frac{2.00 - 5.50}{2.40}\right) = 17,500,000.$$

11. If AS enters into the yen-real currency swap with a notional principal of ¥1.2 billion (R40.0 million), net yen interest expense for each year is *closest* to:

    A. ¥28.80 million.
    B. ¥85.20 million.
    C. ¥114.00 million.

    Answer: A

    "Risk Management Applications of Swap Strategies," Don M. Chance, CFA
    2009 Modular Level III, Volume 5, pp. 455-458
    Study Session 15-44-e
    Explain how a company can generate savings by issuing a loan or bond in its own currency and using a currency swap to convert the obligation into another currency.

    If AS borrows in yen, it will borrow ¥1.2 billion (=R30,000,000 × ¥40/R). In order to hedge this, it will enter into a currency swap with a notional principal of ¥1.2

billion/R30,000,000. It will receive 7.10% in yen from the swap and pay 9.50% in yen on the loan, for a net payment of 2.40% (on ¥1.2 billion) or ¥28.80 million.

12. Dantas' description of the use of a swaption in anticipation of future borrowing is:

    A. correct.
    B. incorrect, because AS should enter into a receiver swaption.
    C. incorrect, because the fixed rate paid on the loan may be less than 14.3%.

    Answer: C

    "Risk Management Applications of Swap Strategies," Don M. Chance, CFA
    2009 Modular Level III, Volume 5, pp. 475-478
    Study Session 15-44-h
    Demonstrate the use of an interest rate swaption (1) to change the payment pattern of an anticipated future loan and (2) to terminate a swap.

    The payer swaption gives AS the right (but not the obligation) to enter into the desired swap position at a fixed rate of 14.3%. In six months, the market (fixed) rate on a four-year swap may be less than 14.3%, in which case the swaption will be out-of-the-money and will expire worthless. In such case, AS will enter into the desired swap at a rate of less than 14.3%.

Redlands Case Scenario

13. Which of the following performance presentation notes contains an error or omission that is *most likely* to prevent RAM from being in compliance with the GIPS standards?

    A. Composite list availability.
    B. Non-fee paying accounts disclosure.
    C. Disclosure concerning discontinued composites.

    Answer: B

    Global Investment Performance Standards, Philip Lawton, CFA, and W. Bruce Remington, CFA
    2009 Level III, Volume 6, pp. 274, 281, 311
    Study Session 18-49-s
    Identify errors and omissions in given performance presentations, including real estate and private equity performance presentations.

    The percentage of the composite which non-fee paying accounts represent should be disclosed, (Provision II.5A.7).

14. Which of the following performance presentation notes *most likely* comply with the recommendations and requirements of the GIPS standards?

    A. Pricing source.
    B. Cash-basis accounting.
    C. Returns calculated gross of fees.

    Answer: C

    Global Investment Performance Standards, Philip Lawton, CFA, and W. Bruce Remington, CFA
    2009 Level III, Volume 6, pp. 246, 274
    Study Session 18-49-l, s
    State the requirements and recommendations of the GIPS standards with respect to presentation and reporting, including the required timeframe of compliant performance records, annual returns, composite market values, and benchmarks.
    Identify errors and omissions in given performance presentations, including real estate and private equity performance presentations.

    Returns must be clearly labeled as gross of fees or net of fees (Provision II.4.A.6).

15. Which of the following performance presentation notes would *least likely* prevent RAM from being in compliance with the GIPS standards?

    A. Monthly valuations.
    B. Non-fee paying accounts.
    C. Settlement-date accounting.

    Answer: A

    Global Investment Performance Standards, Philip Lawton, CFA, and W. Bruce Remington, CFA
    2009 Level III, Volume 6, pp. 246, 247, 281
    Study Session 18-49-d, s
    State the requirements and recommendations of the GIPS standards with respect to input data, including accounting policies related to asset valuation and performance measurement.
    Identify errors and omissions in given performance presentations, including real estate and private equity performance presentations.

    GIPS recommends performance presentations include returns for quarterly and/or shorter time periods (Provisions II.1.A.3-4).

16. Which of the following concerning fees in RAM's performance presentation *most likely* meets GIPS standards?

    A. Gross of fee labeling.
    B. The firm's fee schedule.
    C. The deduction of any other fees.

    Answer: A

    Global Investment Performance Standards, Philip Lawton, CFA, and W. Bruce Remington, CFA
    2009 Level III, Volume 6, p. 274
    Study Session 18-49-k
    State the requirements and recommendations of the GIPS standards with respect to disclosures, including fees; the use of leverage and derivatives; conformity with local laws and regulations that conflict with the GIPS standards: and non-compliant performance records.

    The GIPS standards requires that returns be clearly labeled as gross of fees or net of fees (Provision II.4.A.6).

17. Does RAM's performance presentation *most likely* meet GIPS standards concerning dispersion?

    A. Yes.
    B. No, the method chosen must be disclosed.
    C. No, the standard deviation must be presented.

    Answer: B

    Global Investment Performance Standards, Philip Lawton, CFA, and W. Bruce Remington, CFA
    2009 Level III, Volume 6, p. 275
    Study Session 18-49-n
    Evaluate the relative merits of high/low, interquartile range, and standard deviation as measures of the dispersion of portfolio returns within a composite.

    The GIPS standards require firms to disclose which dispersion measure is presented. (Provision II.4.A.26).

18. RAM's verification *most likely* does not meet GIPS standards concerning verification because:

    A. composite verification is not allowed.
    B. the minimum time period has not been met.
    C. the calculation methodology must be disclosed.

Answer: A

Global Investment Performance Standards, Philip Lawton, CFA, and W. Bruce Remington, CFA
2009 Level III, Volume 6, p. 294
Study Session 18-49-t
Explain the purpose, scope, and process of verification.

The GIPS standards specifically prohibit firms from stating that a particular composite presentation has been "GIPS verified," (Provision III.C).

The Morning Session of the 2015 Level III CFA® Examination has 11 questions. For grading purposes, the maximum point value for each question is equal to the number of minutes allocated to that question.

Question	Topic	Minutes
1	Portfolio Management – Institutional	14
2	Portfolio Management – Institutional	17
3	Portfolio Management – Fixed Income	19
4	Portfolio Management – Alternative Investments	20
5	Portfolio Management – Performance Evaluation	15
6	Portfolio Management – Risk Management	14
7	Portfolio Management – Individual	18
8	Portfolio Management – Individual	16
9	Portfolio Management – Asset Allocation	15
10	Portfolio Management – Economics	14
11	Portfolio Management – Individual/Behavioral	18
	Total:	**180**

Questions 1 and 2 relate to Saylor Guitars and Sandeep Nayar. A total of 31 minutes is allocated to these questions. *Candidates should answer these questions in the order presented.*

QUESTION 1 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 14 MINUTES.

Saylor Guitars was established 25 years ago in the US. Today, the company employs a highly-skilled workforce to produce handmade guitars. Ten years ago, the company instituted a defined-benefit pension plan (the Plan). There is no provision for early retirement. The average age of the workforce is 35 years, and there are no current pension recipients.

Until last year, Saylor made annual contributions to the Plan and it had a surplus. However, the latest economic downturn reduced sales of Saylor's premium-priced guitars, which resulted in lower profitability. This led the company to omit Plan contributions and now the Plan is just fully funded with no surplus. Customer orders have begun to increase with an improvement in the overall economy. Based on past experience, the company is forecasting that it will return to its typical high profit levels in the next several months. Saylor also expects to resume its contributions to the Plan in the first half of the upcoming year.

The average annual return on the Plan's asset portfolio since inception has been 4.8%. The portfolio is well-diversified across asset classes and has low return correlation with the broad equity market. Saylor uses a discount rate of 4.5% to compute its pension benefit obligation. The expected inflation rate is 1.5%. Saylor's debt-to-assets ratio is 0.42 compared to the industry average of 0.40.

A. **Determine** whether the risk tolerance of the Plan is below-average or above-average. **Justify** your response with *two* reasons.

Note: Restating case facts is an incomplete justification and will not receive credit.

5 minutes (Answer 1-A on page 3)

B. **State** the minimum return requirement of the Plan. **Explain** your response.

4 minutes (Answer 1-B on page 4)

One month later, Saylor's management decides to offer to employees over age 50, a one-time lump-sum early retirement option that will be payable next year. Ten percent of Saylor's employees accept this option.

C. **Discuss** how the acceptance of the early retirement option changed *each* of the following:

i. Liquidity requirement
ii. Duration of Plan liabilities

5 minutes (Answer 1-C on page 5)

Answer Question 1-A on This Page

1-A. **Determine** whether the risk tolerance of the Plan is below-average or above-average. **Justify** your response with *two* reasons.

Note: Restating case facts is an incomplete justification and will not receive credit.

Answer Question 1-B on This Page

1-B. **State** the minimum return requirement of the Plan. **Explain** your response.

Answer Question 1-C on This Page

1-C. **Discuss** how the acceptance of the early retirement option changed *each* of the following:

i. Liquidity requirement

ii. Duration of Plan liabilities

Questions 1 and 2 relate to Saylor Guitars and Sandeep Nayar. A total of 31 minutes is allocated to these questions. ***Candidates should answer these questions in the order presented.***

QUESTION 2 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 17 MINUTES.

Two years have passed and the fund manager for Saylor Guitars' defined-benefit pension plan (the Plan) is Sandeep Nayar. The Plan's portfolio currently has an asset allocation of 80% nominal bonds and 20% equities. Nayar believes the portfolio lies on the efficient frontier and the returns have a relatively low correlation with Saylor's operating results.

The profile of the Plan is presented in Exhibit 1.

Exhibit 1
Saylor Pension Plan Profile

Average age of workforce	33
Retirement age	60
Percentage of retired lives	8%
Expected annual wage growth	4%

Retirement benefits are fully indexed for inflation. Expected annual wage growth includes wage inflation of 1% and productivity increases of 3%.

During a meeting with the company founder, Tom Anderson, Nayar describes his approach to managing pension risk as an asset-only approach. Anderson asks about other approaches to managing pension risk. Nayar explains the liability-relative approach to pension fund investing.

A. **Contrast** Nayar's approach with the liability-relative approach for *each* of the following:

i. The Plan's liability risk exposure
ii. The characteristics of a low-risk investment

6 minutes **(Answer 2-A on page 8)**

B. **Recommend** *two* changes to the Plan's current asset allocation that would be consistent with the liability-relative approach. **Justify** *each* response.

6 minutes **(Answer 2-B on page 9)**

Nayar also manages the investment portfolio of the Anderson Community Foundation (the Foundation). The purpose of the Foundation is to provide scholarships to local students for graduate study in science. The Foundation is intended to operate in perpetuity. The Foundation's Board instructs Nayar to take a conservative approach to managing the investment portfolio. There is a 5% annual spending goal but no minimum spending requirement.

C. **Determine** whether the Foundation's ability to take risk is lower than, equal to, or higher than that of the Saylor pension plan. **Justify** your response with *two* reasons.

Note: Restating case facts is an incomplete justification and will not receive credit.

5 minutes (Answer 2-C on page 10)

Answer Question 2-A on This Page

2-A. **Contrast** Nayar's approach with the liability-relative approach for *each* of the following:

i. The Plan's liability risk exposure

ii. The characteristics of a low-risk investment

Answer Question 2-B on This Page

2-B. **Recommend** *two* changes to the Plan's current asset allocation that would be consistent with the liability-relative approach. **Justify** *each* response.

Answer Question 2-C on This Page

Note: Restating case facts is an incomplete justification and will not receive credit.

Determine whether the Foundation's ability to take risk is lower than, equal to, or higher than that of the Saylor pension plan. (circle one)	**Justify** your response with *two* reasons.
lower than equal to higher than	1.
	2.

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QUESTION 3 HAS FOUR PARTS (A, B, C, D) FOR A TOTAL OF 19 MINUTES.

Camille Blanc is a fixed income manager who recently started the Optima mutual fund. The fund is invested in a diversified portfolio of government and corporate bonds. The fund's mandate requires the effective duration of its portfolio to match that of its benchmark. Blanc's objective is to outperform a fixed-income benchmark by using an enhanced-indexing strategy.

Blanc evaluates the price sensitivities of Optima relative to its benchmark for changes in the yield curve using scenario analysis:

Scenario 1: She simulates an immediate 10 basis point (bps) parallel shift in the yield curve and finds no difference in the price sensitivities between Optima and its benchmark.

Scenario 2: She simulates an immediate 30 bps change in the 5-year spot rate and holds all other rates constant. She finds a 19 bps difference in the price sensitivities between Optima and its benchmark.

A. **Determine** whether Optima *most likely* violates its mandate under *each* of the following:

i. Scenario 1
ii. Scenario 2

Justify your response for *each* scenario.

Note: Consider *each* scenario independently.

6 minutes (Answer Question 3-A on page 14)

Both Optima and its benchmark hold positions in Treasury bonds, non-callable corporate bonds, and callable corporate bonds. Based on her analysis of the market, Blanc expects credit spreads to narrow and yields to experience a downward parallel shift. She evaluates the following trade: buy a callable corporate bond and sell a non-callable corporate bond of the same maturity and credit quality. Both bonds are trading at par.

B. **Determine**, given Blanc's expectations, whether she should implement the trade. **Justify** your response.

Note: Ignore transaction costs and assume volatility is unchanged.

3 minutes (Answer Question 3-B on page 15)

One year later, Blanc is managing another mutual fund, Intrepid, which is more actively managed than Optima. Blanc forecasts a stronger economy and an upward parallel shift in the yield curve. She evaluates the following two trades:

Trade 1: Buy a 10-year Ba1/BB+ consumer cyclical sector bond and sell a 10-year Baa3/BBB– consumer cyclical sector bond of another issuer

Trade 2: Buy a 3-year non-callable bond with a 5% coupon and sell a 3-year non-callable bond with a zero coupon of the same issuer and credit quality

C. **Determine** the expected effect (negative, no effect, positive) on Intrepid's performance from *each* of the following trades, assuming Blanc's forecasts are realized:

i. Trade 1
ii. Trade 2

Justify *each* response.

Note: Ignore transaction costs and assume volatility is constant.

6 minutes (Answer Question 3-C on page 16)

Blanc decides to add another bond to the Intrepid portfolio. She uses mean-reversion analysis to determine which of the three bonds shown in Exhibit 1 to purchase. The three bonds have similar durations. Their credit spreads are normally distributed and no structural changes are expected in the market.

Exhibit 1
Proposed Bond Purchases
Credit Spread and Standard Deviation
(in bps)

Bond	Current Spread	Historical Mean Spread	Standard Deviation of Spread
Aries	300	210	50
Libra	320	230	30
Taurus	340	240	40

D. **Determine** the *most* appropriate bond to purchase using mean-reversion analysis. **Justify** your response.

4 minutes (Answer Question 3-D on page 17)

Answer Question 3-A on This Page

3-A. **Determine** whether Optima *most likely* violates its mandate under *each* scenario. **Justify** your response for *each* scenario.

Note: Consider *each* scenario independently.

i. Scenario 1

ii. Scenario 2

Answer Question 3-B on This Page

3-B. **Determine**, given Blanc's expectations, whether she should implement the trade. **Justify** your response.

Note: Ignore transaction costs and assume volatility is unchanged.

Answer Question 3-C on This Page

Note: Ignore transcation costs and assume volatility is constant.

Trade	**Determine** the expected effect (negative, no effect, positive) on Intrepid's performance from *each* of the following trades, assuming Blanc's forecasts are realized. (circle one)	**Justify** *each* response.
i. Trade 1	negative no effect positive	
ii. Trade 2	negative no effect positive	

Answer Question 3-D on This Page

3-D. **Determine** the *most* appropriate bond to purchase using mean-reversion analysis. **Justify** your response.

QUESTION 4 HAS FIVE PARTS (A, B, C, D, E) FOR A TOTAL OF 20 MINUTES.

The Vizyon Foundation promotes scientific research in the US. Vizyon's investment portfolio is allocated 60% to equities and 40% to bonds. Given the low-return environment, Vizyon is researching opportunities to expand into different assets and hires an analyst, Olivia Andrich, to lead this effort.

Vizyon's trustees are evaluating the expected impact on the Foundation's portfolio characteristics if they reallocate 10% of existing equities to non-leveraged direct real estate investments. Andrich wants to determine the index that best represents the portfolio characteristics of direct real estate investments and examines the indices in Exhibit 1. The expected Sharpe ratio of Vizyon's current portfolio is 0.70.

Exhibit 1
Real Estate Index Analysis

Index	**Index Characteristics**	**Expected Sharpe Ratio of the Index**
NAREIT	Security-based	0.81
NAREIT (hedged)	Security-based	0.71
NCREIF	Appraisal-based	0.79
NCREIF (unsmoothed)	Appraisal-based	0.74

A. **Determine** the *most* appropriate index to represent the expected characteristics of Vizyon's proposed investment in real estate. **Justify** your response with *two* reasons.

5 minutes (Answer Question 4-A on page 20)

Vizyon's trustees recently received two real estate investment proposals. The first proposal is to acquire a privately owned shopping center valued at USD 230 million. The second proposal is to acquire 10% of the equity in a publicly listed hotel chain with a USD 2.3 billion market capitalization. Andrich summarizes the key points of the two proposals in Exhibit 2. She expects a higher return from the shopping center.

Exhibit 2
Summary of Investment Proposals

Direct Investment in Shopping Center

- Luxury shopping center located in a fashionable district
- 100% privately owned by the original owner since development 7 years ago
- Fixed transaction cost of USD 18 million

Public Equity Investment in Hotel Chain

- Budget hotel chain offering affordable accommodations across the US
- Listed on the New York Stock Exchange for 10 years
- 10 million shares outstanding
- Estimated transaction cost of 18 basis points (bps)
- Hotel chain's board rejected several buyout offers from different investors in the past 5 years

B. **Discuss**, based *only* on the information provided, *three* disadvantages to Vizyon of a direct investment in the shopping center relative to an investment in the publicly traded equity of the hotel chain.

6 minutes (Answer Question 4-B on page 21)

Next, Andrich considers an investment in distressed debt. She uses a 3-year horizon for evaluating the investment. Andrich analyzes Khepri Capital, a newly formed distressed debt hedge fund, and notes the following about Khepri:

- 1% annual management fee on average NAV
- 15% performance fee paid monthly and calculated based on the monthly change in NAV, subject to a high-water mark provision
- 3-year lock-up period
- 14% of NAV is invested in a distressed automotive company that recently filed for bankruptcy protection
- NAV per unit at the end of May was a new all-time high of USD 3,100

Khepri Capital's subsequent month-end NAV per unit was USD 3,260 in June, USD 2,900 in July, and USD 3,140 in August. There were no interim cash flows from clients during this three-month period.

C. **Calculate** the performance fee (in USD per unit) for the three months from June to August.

3 minutes (Answer Question 4-C on page 22)

D. **Explain** why Khepri Capital is subject to J-factor risk.

3 minutes (Answer Question 4-D on page 23)

Andrich learns of a competing distressed debt hedge fund with a similar performance fee and expected return, but only a 1-year lock-up period. Andrich contacts Khepri Capital and states that she is considering investing in the competitor's fund. A representative for Khepri Capital replies that its 3-year lock-up period is likely to be more favorable to Vizyon than the competitor's 1-year lock-up period.

E. **Support** the representative's reply about Khepri Capital's lock-up period.

3 minutes (Answer Question 4-E on page 24)

Answer Question 4-A on This Page

4-A. **Determine** the *most* appropriate index to represent the expected characteristics of Vizyon's proposed investment in real estate. **Justify** your response with *two* reasons.

Answer Question 4-B on This Page

4-B. **Discuss**, based *only* on the information provided, *three* disadvantages to Vizyon of a direct investment in the shopping center relative to an investment in the publicly traded equity of the hotel chain.

Answer Question 4-C on This Page

4-C. **Calculate** the performance fee (in USD per unit) for the three months from June to August.

Answer Question 4-D on This Page

4-D. **Explain** why Khepri Capital is subject to J-factor risk.

Answer Question 4-E on This Page

4-E. **Support** the representative's reply about Khepri Capital's lock-up period.

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QUESTION 5 HAS FOUR PARTS (A, B, C, D) FOR A TOTAL OF 15 MINUTES.

Javier Costa is an analyst for a fund sponsor in Latin America. The fund sponsor uses two equity managers (Manager A and Manager B) and each invests in developed and emerging markets.

Costa prepares a performance attribution analysis for the total fund. He identifies the fund's sources of return and develops the macro attribution table in Exhibit 1.

Exhibit 1
Total Fund Level
Macro Attribution for 1 January – 31 March

Decision-Making Level (Investment Alternative)	Fund Value (in USD)	Incremental Return Contribution (%)	Incremental Value Contribution/(Withdrawal) (in USD)
Beginning value	360,000,000	---	---
Risk-free asset	361,800,000	0.50	1,800,000
Asset category	388,872,000	7.52	27,072,000
Benchmarks	389,376,000	0.14	504,000
Investment managers	389,664,000	0.08	288,000
Allocation effects	389,304,000	–0.10	(360,000)
Total fund	389,304,000	8.14	29,304,000

A. **Demonstrate** whether the total fund outperformed a pure indexing strategy.

3 minutes (Answer Question 5-A on page 28)

B. **Determine** how much of the fund's return was due to *each* of the following:

i. Style bias
ii. Active management

4 minutes (Answer Question 5-B on page 29)

Costa gathers the information in Exhibit 2 to evaluate the performance of Manager A.

Exhibit 2
Equity Manager A
Valuations and Cash Flows
(in USD)

Date	Contribution/(Withdrawal)	Market Value (After Cash Flows)
31 March	---	121,000,000
8 April	13,000,000	135,000,000
23 April	(8,000,000)	127,000,000
30 April	---	123,000,000

C. **Calculate** the time-weighted rate of return for Manager A for the month of April. **Show** your calculations.

4 minutes (Answer Question 5-C on page 30)

Next, Costa presents the micro attribution analysis for Manager B shown in Exhibit 3. Manager B's objective is to outperform her benchmark through superior security selection.

Exhibit 3
Equity Manager B
Micro Attribution

Sector	**Portfolio Weight (%)**	**Benchmark Weight (%)**	**Portfolio Return (%)**	**Benchmark Return (%)**
Consumer durables	21.53	28.70	9.47	4.16
Energy	34.91	45.44	8.21	5.43
Financial	31.35	11.79	6.82	4.98
Technology	12.21	14.07	–9.02	–1.71
Total portfolio	100.00	100.00	5.94	4.01

D. **Calculate** *each* of the following for Manager B:

i. Pure sector allocation return for the Financial sector
ii. Within-sector selection return for the Technology sector

Show your calculations.

Note: Ignore interaction effects.

4 minutes (Answer Question 5-D on page 31)

Answer Question 5-A on This Page

5-A. **Demonstrate** whether the total fund outperformed a pure indexing strategy.

Answer Question 5-B on This Page

5-B. **Determine** how much of the fund's return was due to *each* of the following:

i. Style bias

ii. Active management

Answer Question 5-C on This Page

5-C. **Calculate** the time-weighted rate of return for Manager A for the month of April. **Show** your calculations.

Answer Question 5-D on This Page

5-D. **Calculate** *each* of the following for Manager B. **Show** your calculations.

Note: Ignore interaction effects.

i. Pure sector allocation return for the Financial sector.

ii. Within-sector selection return for the Technology sector.

QUESTION 6 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 14 MINUTES.

Tartan Management is a hedge fund that uses derivatives in its portfolio. Tartan's new director of risk management, Jan Magnuson, is reviewing Tartan's credit risk exposures. Tartan's current policy is to use a different counterparty for each derivative holding to limit its credit exposure to any single counterparty. Its current derivatives holdings are shown in Exhibit 1. All derivatives are over-the-counter (OTC) and are not subject to collateral requirements.

Exhibit 1
Derivatives Holdings of Tartan Management
(all figures in USD)

Holding	**Description**	**Notional Principal**	**Current Value**
Interest rate swap	1 year; quarterly payments; pay floating, receive fixed	2,000,000	56,000
Forward	2 years; long natural gas	5,000,000	–225,000
Option	6 months; long call option on S&P 500 equity index	5,000,000	487,000

A. **Determine** Tartan's total amount (in USD) at risk of credit loss from its derivatives portfolio under its current policy.

4 minutes (Answer Question 6-A on page 34)

Magnuson considers whether Tartan's credit risk in the event of a default could be reduced by using a single counterparty with payment netting for all derivatives. The single counterparty would be a different company than any of the three current counterparties.

B. **Discuss**, based on Tartan's current holdings shown in Exhibit 1, *one* positive effect and *one* negative effect that payment netting with a single counterparty could have on Tartan's credit risk.

Note: Assume there is no difference in the cost of credit monitoring between the two alternatives.

4 minutes (Answer Question 6-B on page 35)

Magnuson wants to reduce the credit risk that Tartan might incur with derivative positions in the future. He asks his staff to research sources of credit risk. The staff recommends the following for Tartan:

Recommendation 1: Use only currency futures rather than currency swaps.

Recommendation 2: Buy OTC put options rather than write OTC call options.

C. **Determine** whether *each* of the following recommendations would *most likely* achieve Magnuson's objective of reducing credit risk:

i. Recommendation 1
ii. Recommendation 2

Justify *each* response.

6 minutes (Answer Question 6-C on page 36)

Answer Question 6-A on This Page

6-A. **Determine** Tartan's total amount (in USD) at risk of credit loss from its derivatives portfolio under its current policy.

Answer Question 6-B on This Page

6-B. **Discuss**, based on Tartan's current holdings shown in Exhibit 1, *one* positive effect and *one* negative effect that payment netting with a single counterparty could have on Tartan's credit risk.

Note: Assume there is no difference in the cost of credit monitoring between the two alternatives.

Answer Question 6-C on This Page

6-C. **Determine** whether *each* of the following recommendations would *most likely* achieve Magnuson's objective of reducing credit risk. **Justify** *each* response.

i. Recommendation 1.

ii. Recommendation 2.

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Questions 7 and 8 relate to the Betty Friesen family. A total of 34 minutes is allocated to these questions. *Candidates should answer these questions in the order presented.*

QUESTION 7 HAS FOUR PARTS (A, B, C, D) FOR A TOTAL OF 18 MINUTES.

Adrian Tuggle is a financial advisor counseling Betty Friesen and her husband, Jack Friesen. Betty is 79 years old and has a 42-year-old son, Ryan Smith, from a previous marriage. Ryan has 18-year-old twin daughters. Betty wishes to provide for her family, but intends to donate the majority of her assets to charity. Betty's total asset base is currently USD 120,000,000.

Betty lives in a community property jurisdiction that entitles Jack to receive half of the community property tax-free upon her death. Most of Betty's wealth is considered separate property, with the community property amounting to only 10% of her total assets. Exhibit 1 summarizes gift and inheritance tax rates applicable to the Friesen family.

Exhibit 1
Gift and Inheritance Tax Rates

Tax Type	Tax Rate
Spousal inheritance tax	20%
Spousal gift tax	25%
Non-spousal inheritance tax	50%
Non-spousal gift tax	30%

Note: All taxes are due immediately at the time of the transfer and are paid for by the recipient.

Betty feels that Jack's legal entitlement under the community property rules will not be sufficient to meet his financial needs. Tuggle estimates that if Betty were to die today, Jack would need to inherit USD 8,000,000 net of any taxes to meet his needs.

A. **Calculate** the minimum bequest (in USD) from Betty's estate to Jack in order to meet his spending needs and taxes. **Show** your calculations.

4 minutes (Answer Question 7-A on page 40)

Betty's son, Ryan, works for the local university as an academic advisor. He enjoys an extravagant lifestyle, as Betty provides for his spending needs beyond his salary. Betty states that she will stop providing ongoing support and instead make an immediate one-time gift to Ryan. His goals are to maintain his lifestyle, cover his daughters' university expenses starting next year, and retire in four years. Betty asks Tuggle to estimate the amount of the gift that would cover gift taxes and allow Ryan to achieve his goals. Tuggle will serve as Ryan's financial advisor and gathers the following information from Ryan:

- Until retirement, Ryan's annual after-tax salary will be USD 30,000 and his annual spending needs will be USD 200,000.
- Combined annual cost of education for the twins is USD 190,000 for each of the next four years, and the first payment is due in a year.
- Ryan has no savings.

Tuggle determines that Betty's gift to Ryan could be invested in a portfolio expected to earn a before-tax rate of return of 8% per year for the next four years. When Ryan retires in four years, he will need an investment portfolio valued at USD 5,000,000 to maintain his lifestyle in retirement. Ryan's investment returns will be taxed at 25% annually.

B. **Calculate** the amount (in USD) of the one-time gift, before gift taxes, that must be transferred from Betty's assets to Ryan to allow him to achieve his goals.

Note: Assume that salaries and ongoing expenses are end-of-year cash flows.

6 minutes (Answer Question 7-B on page 41)

After the assets are transferred from Betty to Ryan, Tuggle prepares Ryan's IPS.

C. **Identify** *one* factor that decreases and *one* factor that increases Ryan's ability to take risk.

4 minutes (Answer Question 7-C on page 42)

D. **Formulate** *each* of the following constraints for Ryan's IPS:

i. Time horizon
ii. Liquidity

Note: Ignore gift taxes for purposes of the liquidity constraint.

4 minutes (Answer Question 7-D on page 43)

Answer Question 7-A on This Page

7-A. **Calculate** the minimum bequest (in USD) from Betty's estate to Jack in order to meet his spending needs and taxes. **Show** your calculations.

Answer Question 7-B on This Page

7-B. **Calculate** the amount (in USD) of the one-time gift, before gift taxes, that must be transferred from Betty's assets to Ryan to allow him to achieve his goals.

Note: Assume that salaries and ongoing expenses are end-of-year cash flows.

Answer Question 7-C on This Page

7-C. **Identify** *one* factor that decreases and *one* factor that increases Ryan's ability to take risk.

Answer Question 7-D on This Page

7-D. **Formulate** *each* of the following constraints for Ryan's IPS:

i. Time horizon

ii. Liquidity

Note: Ignore gift taxes for purposes of the liquidity constraint.

Questions 7 and 8 relate to the Betty Friesen family. A total of 34 minutes is allocated to these questions. *Candidates should answer these questions in the order presented.*

QUESTION 8 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 16 MINUTES.

Twenty-five years have passed and Ryan Smith is now 67 years old. He is currently meeting with his new financial advisor, Tanya Hamilton. Ryan's 43-year-old twin daughters, Debra and Kelly, are both married with children. He is planning to give his daughters annual cash gifts for the next several years.

Ryan's retirement portfolio consists of 60% equities and 40% fixed income, and he withdraws funds from the portfolio to meet his cash flow needs in retirement. Ryan asks Hamilton if he should make any changes to his portfolio as a result of his gifting plan. Hamilton recommends substantially increasing the portfolio's allocation to fixed income.

A. **Determine** whether implementing Hamilton's recommendation would *most likely* decrease, not change, or increase Ryan's:

i. financial market risk.
ii. longevity risk.

Justify *each* response.

6 minutes (Answer Question 8-A on page 46)

Ryan is concerned about the performance of his portfolio due to a current low interest rate environment and expectations of rising inflation. Ryan tells Hamilton that he recently read an article in a personal finance magazine about annuities that pay a lifetime income stream. Hamilton explains to Ryan that an immediate fixed annuity with a non-trade-out provision would provide lifetime income and could be a possible alternative to his current portfolio. Ryan considers converting his entire portfolio to this annuity.

B. **Discuss**, using *only* the information provided, *two* reasons why investing entirely in the immediate fixed annuity might not be appropriate for Ryan.

4 minutes (Answer Question 8-B on page 47)

Later in his meeting with Hamilton, Ryan shares a concern that his daughters do not have enough life insurance. Both daughters are in good health. Hamilton explains to Ryan the role of human capital in assessing a person's life insurance needs. Ryan provides the following information about his daughters:

- Debra works for a publicly traded financial services company. In addition to her salary, she receives an annual bonus that is directly related to the performance of her company's equity. Although volatile, her total compensation averages USD 100,000 per year. Debra has an investment portfolio valued at USD 200,000.

- Kelly works for the local city government. She earns USD 75,000 per year. Her job is secure and her salary is stable. Kelly's investment portfolio is valued at USD 500,000.

C. **Identify** *one* factor that indicates Debra needs:

i. *less* life insurance than Kelly.
ii. *more* life insurance than Kelly.

Justify *each* response.

6 minutes **(Answer Question 8-C on page 48)**

Answer Question 8-A on This Page

Risk	**Determine** whether implementing Hamilton's recommendation would *most likely* decrease, not change, or increase Ryan's risk. (circle one)	**Justify** *each* response.
i. financial market risk	decrease not change increase	
ii. longevity risk	decrease not change increase	

Answer Question 8-B on This Page

8-B. **Discuss**, using *only* the information provided, *two* reasons why investing entirely in the immediate fixed annuity might not be appropriate for Ryan.

Answer Question 8-C on This Page

8-C. **Identify** *one* factor that indicates Debra needs: (see i. and ii. below)
Justify *each* response.

i. *less* life insurance than Kelly.

ii. *more* life insurance than Kelly.

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QUESTION 9 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 15 MINUTES.

Michael Delaney, Chief Investment Officer for investment management firm Gulf & Co., is developing a new mutual fund that invests only in US-based technology companies. The fund will be an actively managed, concentrated equity portfolio with a bias toward small-cap stocks. The minimum and maximum position sizes will be 3% and 5% of the portfolio, respectively.

Delaney would like to use a market sector index that is representative of its portfolio as the benchmark. The US technology sector is currently dominated by a few very large-capitalization companies. Additionally, several companies in the sector have very high per-share prices. Delaney believes the sector is undervalued.

Delaney considers two market sector indexes for the benchmark, one capitalization-weighted and the other equal-weighted. Both are US-only, all-capitalization technology sector indexes with similar constituent stocks. Delaney chooses the equal-weighted sector index.

A. **Support**, with *two* reasons, Delaney's choice of the equal-weighted index as a benchmark rather than the capitalization-weighted index, based *only* on the information provided.

4 minutes (Answer Question 9-A on page 52)

Pete Aron, portfolio manager for Gulf & Co.'s European technology fund, is concerned about currency fluctuations related to the equity portfolio (the Portfolio). The Portfolio is valued in USD, but has exposure to multiple European currencies, primarily the EUR.

Aron formulates the following market expectations for the coming year:

- Expected return (in EUR) of the Portfolio: +13.2%
- Standard deviation (in EUR) of the Portfolio: 15%
- Expected USD/EUR spot rate in one year: 1.2045 (1 EUR = 1.2045 USD)
- Standard deviation of the USD/EUR exchange rate: 5%
- Correlation between the USD/EUR exchange rate and the Portfolio (in EUR): –0.07

The market quotes presented in Exhibit 1 are available from a currency dealer:

Exhibit 1
Select Market Quotes

USD/EUR spot rate	1.1930
1-year USD/EUR forward rate (bid–offer)	1.2065 – 1.2090

Aron considers selling EUR and buying USD using a one-year forward contract to fully hedge the EUR currency risk. He will execute the trade if he can achieve the following risk/return objectives:

Objective 1: Increase the Portfolio's expected return (in USD) by at least 25 basis points.

Objective 2: Reduce the Portfolio's expected standard deviation (in USD) by at least 30 basis points.

B. **Determine**, based on Aron's market expectations, whether he should execute the forward trade with respect to *each* of the following:

i. Objective 1
ii. Objective 2

Justify your response. **Show** your calculations.

Note: Assume a one-year time horizon. Consider *each* objective independently.

6 minutes (Answer Question 9-B on page 53)

One of the non-EUR currency exposures in the Portfolio is GBP. Aron frequently adjusts his GBP positions based on his short-term tactical outlook. Aron forecasts that the GBP will appreciate by 5% against the USD over the next six months. The current USD/GBP rate is 1.60 (1 GBP = 1.60 USD). Aron is considering the following six-month European option positions with the primary objective of increasing his GBP exposure in line with his forecast, and a secondary objective of minimizing the initial cash outlay:

Trade 1: Buy call with 1.68 strike
Sell call with 1.72 strike

Trade 2: Buy call with 1.60 strike
Sell call with 1.68 strike

Trade 3: Buy call with 1.60 strike
Sell call with 1.72 strike

C. **Determine** the trade that will *most likely* satisfy Aron's objectives at expiration. **Justify** your response.

5 minutes (Answer Question 9-C on page 54)

Answer Question 9-A on This Page

9-A. **Support**, with *two* reasons, Delaney's choice of the equal-weighted index as a benchmark rather than the capitalization-weighted index, based *only* on the information provided.

Answer Question 9-B on This Page

9-B. **Determine**, based on Aron's market expectations, whether he should execute the forward trade with respect to *each* Objective. **Justify** your response. **Show** your calculations.

Note: Assume a one-year time horizon. Consider *each* objective independently.

i. Objective 1.

ii. Objective 2.

Answer Question 9-C on This Page

9-C. **Determine** the trade that will *most likely* satisfy Aron's objectives at expiration. **Justify** your response.

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QUESTION 10 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 14 MINUTES.

Conner Young is an economist at a multi-strategy asset management firm. Each year, he provides his firm with a report that includes a series of market forecasts. As part of his report, Young uses the Grinold-Kroner model to forecast the expected rate of return on equities for the next 10 years. He uses the data in Exhibit 1 to prepare his forecast.

Exhibit 1
Young's Market Forecast

Factor	**10-Year Forecast (annualized)**
Dividend yield	1.80%
Dividend growth rate	4.00%
Change in P/E multiple	0.50%
Inflation rate	1.20%
Change in number of shares outstanding	–0.30%
Real total earnings growth rate	2.50%

A. **Determine** the following sources of return for equities, according to the Grinold-Kroner model, using Young's forecasts:

i. Expected nominal earnings growth return
ii. Expected repricing return
iii. Expected income return

Show any calculations.

6 minutes (Answer Question 10-A on page 58)

Young also reviews the central bank's current monetary policy. He uses the data in Exhibit 2 and the Taylor rule to determine whether the central bank is likely to change its target short-term interest rate. The neutral short-term interest rate is equal to the central bank's current target rate.

Exhibit 2
Economic Data and Central Bank Forecasts

Target inflation rate	1.00%
Forecast inflation rate	1.20%
Inflation rate (last 12 months)	2.20%
Neutral short-term interest rate	2.50%
Real GDP trend growth rate	2.00%
Real GDP forecast growth rate	1.50%

B. **Determine** whether the central bank should loosen or tighten monetary policy, assuming it follows the Taylor rule. **Justify** your response. **Show** your calculations.

4 minutes (Answer Question 10-B on page 59)

One year later, Young meets with his firm's fixed income portfolio manager, Bianca Dvorak. Dvorak manages a domestic bond fund for the firm and is considering whether to purchase a 5-year callable, BBB-rated corporate bond for the fund. The corporate bond currently yields 4.90%.

Dvorak wants to use the risk premium approach to decide whether to purchase the bond for her fund. The trailing 12-month inflation rate is 1.10% and Young expects inflation to be constant at 1.50% per year for the next five years. Dvorak assumes that the illiquidity discount and tax premium are both zero. Dvorak and Young compile the information in Exhibit 3.

Exhibit 3
Domestic Bond Market Data

Real risk-free interest rate	1.30%
1-year BBB-rated credit risk spread (over Treasuries)	30 basis points
5-year BBB-rated credit risk spread (over Treasuries)	80 basis points
Spread of 5-year Treasury over 1-year Treasury	100 basis points
1-year call risk spread	20 basis points
5-year call risk spread	60 basis points

C. **Determine**, based on the risk premium approach, whether Dvorak should purchase the corporate bond. **Justify** your response. **Show** your calculations.

4 minutes (Answer Question 10-C on page 60)

Answer Question 10-A on This Page

10-A. **Determine** the following sources of return for equities, according to the Grinold-Kroner model, using Young's forecasts: (see i. and ii. below)
Show any calculations.

i. Expected nominal earnings growth return.

ii. Expected repricing return.

iii. Expected income return.

Answer Question 10-B on This Page

10-B. **Determine** whether the central bank should loosen or tighten monetary policy, assuming it follows the Taylor rule. **Justify** your response. **Show** your calculations.

Answer Question 10-C on This Page

10-C. **Determine**, based on the risk premium approach, whether Dvorak should purchase the corporate bond. **Justify** your response. **Show** your calculations.

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QUESTION 11 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 18 MINUTES.

Pablo Rodriquez is an advisor at a brokerage firm with retail clients who are active traders. He acquires four clients from Carla Chee, an advisor who is retiring from the firm. Over the years, Chee regularly surveyed her clients to detect any behavioral biases in their investment decision-making processes. She determined that her clients routinely exhibited the biases summarized in Exhibit 1.

Exhibit 1
Chee Clients: Behavioral Biases

Client	Bias
Client 1	Regret-aversion
Client 2	Loss-aversion
Client 3	Mental accounting
Client 4	Framing

Rodriquez believes that clients act primarily on the basis of their biases. He meets with the clients to evaluate Chee's assessments of their biases.

Client 1 and Client 2:
Rodriquez asks Client 1 and Client 2 to consider two equities, Uno Inc. and Deux Co., which each had purchased for their respective portfolios. The purchase price and current price are shown in Exhibit 2. Neither equity pays dividends.

Exhibit 2
Selected Equity Holdings
(in USD)

Equity	Purchase Price	Current Price
Uno Inc.	55	66
Deux Co.	60	48

A. **Determine**, assuming Chee's bias assessments are correct, which action (buy additional shares, take no action, sell) *each* client will *most likely* choose for *each* of the following equities:

i. Uno Inc.
ii. Deux Co.

Justify *each* response.

Note: Consider *each* client (Client 1 and Client 2) and *each* equity independently.

12 minutes (Answer Question 11-A on page 64)

Client 3:
Client 3 has a preference for only spending the income earned by her portfolio, which is currently allocated 100% to fixed income investments. Rodriquez suggests that she consider changing to a balanced portfolio by adding equities to her existing portfolio. He informs her that the total return from the balanced portfolio should permit her to increase withdrawals from the portfolio without diminishing the real value of her principal. Rodriquez shares with Client 3 the expectations for her current portfolio and the proposed portfolio, shown in Exhibit 3.

Exhibit 3
Investment Portfolio Expectations

Portfolio Allocation Option	Income	Capital Appreciation	Total Return	Standard Deviation
Fixed income portfolio (current)	4.2%	0.0%	4.2%	6.5%
Balanced portfolio (proposed)	3.0%	3.1%	6.1%	9.0%

B. **Determine**, assuming Chee's bias assessment is correct, which portfolio Client 3 would *most likely* prefer. **Justify** your response.

3 minutes (Answer Question 11-B on page 65)

Client 4:
Client 4 has a history of selecting low-volatility equities and government bonds for his portfolio. Rodriquez presents him with two potential investments for his portfolio. He tells the client that:

- Investment Y has a 20% chance of incurring a loss.
- Investment Z has an 80% chance of not incurring a loss.
- Both investments have the same expected return.

Rodriquez asks Client 4 which investment he would prefer for his portfolio.

C. **Determine**, assuming Chee's bias assessment is correct, which investment (Y or Z) Client 4 would *most likely* prefer. **Justify** your response.

3 minutes (Answer Question 11-C on page 66)

Answer Question 11-A on This Page

Note: Consider *each* client (Client 1 and Client 2) and *each* equity independently.

Client (Bias)	Equity	**Determine**, assuming Chee's bias assessments are correct, which action *each* client will *most likely* choose for *each* of the following equities. (circle one)	**Justify** *each* response.
Client 1 (Regret-aversion)	Uno Inc.	buy additional shares take no action sell	
	Deux Co.	buy additional shares take no action sell	
Client 2 (Loss-aversion)	Uno Inc.	buy additional shares take no action sell	
	Deux Co.	buy additional shares take no action sell	

Answer Question 11-B on This Page

11-B. **Determine**, assuming Chee's bias assessment is correct, which portfolio Client 3 would *most likely* prefer. **Justify** your response.

Answer Question 11-C on This Page

11-C. **Determine**, assuming Chee's bias assessment is correct, which investment (Y or Z) Client 4 would *most likely* prefer. **Justify** your response.

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