

2003 CFA[®] Level III Examination

Morning Session – Essay

Candidate Number:

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The following list contains the **command words** used on the Morning Session of the 2003 Level III examination. Candidates may want to refer to this list as they formulate their answers.

- Calculate:** To ascertain or determine by mathematical processes.
- Cite:** To quote by way of evidence, authority, or proof.
- Contrast:** To compare in respect to differences.
- Describe:** To transmit a mental image, an impression, or an understanding of the nature and characteristics of.
- Determine:** To come to a decision as the result of investigation or reasoning; to settle or decide by choice among alternatives or possibilities.
- Evaluate:** To determine or fix the value of; to determine the significance or worth of, usually by careful appraisal and study.
- Explain:** To give the meaning or significance of; to provide an understanding of; to give the reason for or cause of.
- Formulate:** To put in a systematized statement or expression; to prepare according to a formula.
- Give:** To yield or furnish as a product, consequence, or effect; to offer for the consideration, acceptance, or use of another.
- Identify:** To establish the identity of; to show or prove the sameness of.
- Indicate:** To point out or point to with more or less exactness; to show or make known with a fair degree of certainty.
- Judge:** To form an opinion about through careful weighing of evidence and testing of premises.
- Justify:** To prove or show to be valid, sound, or conforming to fact or reason; to furnish grounds or evidence for.
- Prepare:** To put into written form; to draw up.
- Recommend:** To bring forward as being fit or worthy; to indicate as being one's choice for something or as otherwise having one's approval or support.
- Show:** To set forth in a statement, account, or description; to make evident or clear.
- State:** To express in words.

The Morning Session of the 2003 CFA Level III Examination has 13 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	20
2	Portfolio Management	9
3	Portfolio Management	6
4	Asset Valuation	8
5	Quantitative Analysis	16
6	Risk Management	18
7	Portfolio Management	9
8	Portfolio Management	12
9	Portfolio Management	22
10	Portfolio Management	7
11	Portfolio Management	18
12	Asset Valuation	27
13	Portfolio Management	8
	Total:	180

Questions 1 through 3 relate to Rightland Life and Southaw Property and Casualty (P&C), which are life insurance and casualty insurance subsidiaries, respectively, of Alhando Insurance Group. A total of 35 minutes is allocated to these questions. *Candidates should answer these questions in the order presented.* Exhibit 1-1 contains relevant financial data for the two subsidiaries.

**Exhibit 1-1
Financial Data
Two Subsidiaries of Alhando Insurance Group**

	Rightland Life 31 December 2002		Southaw P&C 31 December 2002	
Debt Rating	AA (S&P) Aa1 (Moody's)		BBB (S&P) Baa2 (Moody's)	
Asset Allocation	Corporate Bonds	59%	Corporate Bonds	45%
	Government Bonds	22%	Government Bonds	25%
	Common Stocks	17%	Common Stocks	25%
	Treasury Bills	2%	Treasury Bills	5%
	Total	100%	Total	100%
Average Maturity of Bond Portfolio	10 years		9 years	
Estimated Duration of Liabilities	5		3	
Bond Portfolio's Distribution of Credit Ratings:	Rightland's Portfolio	Industry Average	Southaw's Portfolio	Industry Average
AAA	33%	40%	36%	29%
AA	26%	25%	25%	27%
A	10%	18%	20%	22%
BBB	31%	17%	19%	22%
Total	100%	100%	100%	100%
Historical Surplus as % of Total Assets in Year:	Rightland's Surplus	Industry Average	Southaw's Surplus	Industry Average
2002	17%	5%	10%	8%
2001	20%	---	12%	---
2000	25%	---	13%	---
1999	22%	---	10%	---
1998	20%	---	8%	---

QUESTION 1 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 20 MINUTES.

Rightland Life (a life insurance subsidiary of Alhando Insurance Group) is a U.S.-based life insurance company that underwrites interest-sensitive life insurance products and markets those products in the United States.

Rightland Life's investment portfolio has two segments: The company's interest-sensitive products are funded by a bond portfolio, while the surplus is invested in a diversified common stock portfolio. Rightland Life has had difficulty structuring a bond portfolio that will support its current crediting rate of 6.0 percent as well as cover marketing and administrative expenses, which have been optimized at 1.5 percent. The benchmark for the common stock portfolio is the Wilshire 5000 Total Market Index.

Rightland Life values both its bond and common stock portfolios at market value for financial statement purposes. The recent downturn in the economy has led to a decline in stock prices and to a substantial widening of corporate bond spreads that has occurred even though interest rates in general have declined during the past two years. Easing of monetary policy is expected to result in a protracted downward trend in interest rates. The management of Rightland Life is concerned about growing the surplus and coping with the increasing yield spread on bond investments; management also does not want to hold tobacco and alcohol stocks in the common stock portfolio because of ethical policies adopted by the company's board.

Rightland Life is domiciled in a state that:

- limits the value (at cost) of common stock holdings of life insurance companies to 20.0 percent of total assets.
- limits foreign investments to 5.0 percent of total assets.
- requires an asset valuation reserve to limit the effect of valuation and credit-related losses on the surplus.

A. **Determine** the return requirement for *each* of the following segments of Rightland Life's investment portfolio:

- i. Bond portfolio
- ii. Common stock portfolio

(4 minutes)

B. **Identify** *two* factors that are specific to determining the risk objectives of a life insurance company. **Cite**, for *each* of the two factors, specific evidence from the information given that should be reflected in Rightland Life's risk objectives.

(6 minutes)

- C. **Prepare** the constraints section of an appropriate investment policy statement for Rightland Life.

Note: Your response should include appropriate content for each constraint based on the specific circumstances of Rightland Life.

Answer Question 1-C in the Template provided on page 7.

(10 minutes)

Answer Question 1 on This Page

Template for Question 1-C

Note: Your response should include appropriate content for each constraint based on the specific circumstances of Rightland Life.

Prepare the constraints section of an appropriate investment policy statement for Rightland Life
1.
2.
3.
4.
5.

QUESTION 2 HAS ONE PART FOR A TOTAL OF 9 MINUTES.

Southaw Property and Casualty (P&C), also a subsidiary of Alhando Insurance Group, is a casualty insurance company whose businesses include underwriting and marketing property, marine, and automobile insurance in the United States.

Despite challenging market conditions, Southaw P&C has been able to establish a competitive position by maintaining a surplus position (as a percentage of total assets) that is above the industry average.

Southaw P&C is domiciled in the same state as Rightland Life. That state requires casualty insurers to set aside assets in an amount equal to 50 percent of unearned premium (income) and loss reserves; those assets must be held in the form of eligible bonds and mortgages. Remaining assets may be invested in common stocks, bonds, mortgages, and real estate without limitation on the amount invested in any particular asset class.

In analyzing Rightland Life and Southaw P&C, portfolio manager Colin Anget, CFA, asks his assistant to answer the following three questions:

- Which subsidiary has greater ability to take risk?
- Which subsidiary has a longer time horizon?
- Which subsidiary has greater liquidity needs?

Determine whether Rightland Life or Southaw P&C is the *more* appropriate response to *each* of Anget's three questions. **Justify** *each* of your responses by providing *one* characteristic of the appropriate company.

Answer Question 2 in the Template provided on page 11.

(9 minutes)

Answer Question 2 on This Page

Template for Question 2

Anget's three questions	Determine whether Rightland Life or Southaw P&C is the <i>more</i> appropriate response to <i>each</i> of Anget's three questions (circle one for <i>each</i> question)	Justify <i>each</i> of your responses by providing <i>one</i> characteristic of the appropriate company
Which subsidiary has greater ability to take risk?	<p>Rightland Life</p> <p>Southaw P&C</p>	
Which subsidiary has a longer time horizon?	<p>Rightland Life</p> <p>Southaw P&C</p>	
Which subsidiary has greater liquidity needs?	<p>Rightland Life</p> <p>Southaw P&C</p>	

QUESTION 3 HAS TWO PARTS (A, B) FOR A TOTAL OF 6 MINUTES.

The automobile insurance division of Southaw Property and Casualty (P&C) has historically been an autonomous division with a conservative operating philosophy. As a result of unexpected underwriting losses in recent years, this division has been only marginally profitable. An active portfolio management strategy is now employed to achieve a total return of 4.0 percent for the bond portfolio associated with the automobile insurance division. Because management has stated that asset/liability management is a critical goal, common stocks are excluded from portfolio consideration. The estimated duration of liabilities for this division is 1.8 and the duration is expected to remain between 1.5 and 2.0 for the foreseeable future. The current asset allocation for the automobile insurance division's bond portfolio is described in Exhibit 3-1.

Exhibit 3-1
Asset Allocation of Bond Portfolio
Automobile Insurance Division, Southaw P&C
31 December 2002

Asset Class	Allocation (%)	Expected Return (%)	Expected Standard Deviation (%)	Duration
Cash Equivalents	2	2.0	2.0	0.1
U.S. Intermediate-term Government Bonds	20	4.0	6.0	4.0
U.S. Investment Grade Corporate Bonds	20	5.0	7.0	5.5
U.S. Mortgage-backed Bonds	20	5.0	7.0	3.0
U.S. Long-term Government Bonds	28	5.3	11.0	8.0
U.S. High Yield Corporate Bonds	10	9.0	20.0	4.5
Total Portfolio	100	5.2	9.1	5.2

- A. **Identify** *one* shortcoming of the structure of the asset allocation shown in Exhibit 3-1 with respect to the critical goal stated by management. **Recommend** *two* changes in the asset allocation to address that shortcoming.

(3 minutes)

- B. **State** whether the asset allocation shown in Exhibit 3-1 is appropriate with respect to the liquidity needs of the automobile insurance division. **Justify** your response with *one* reason.

(3 minutes)

Questions 4 through 8 relate to the Windsor Foundation. A total of 63 minutes is allocated to these questions. Candidates should answer these questions in the order presented.

QUESTION 4 HAS ONE PART FOR A TOTAL OF 8 MINUTES.

The Windsor Foundation, a U.S.-based, not-for-profit charitable organization, has a diversified investment portfolio of \$100 million. Windsor's Board of Directors is considering an initial investment in emerging market equities. Robert Houston, Treasurer of the Foundation, has made the following four comments:

1. "For an investor holding only developed market equities, the existence of stable emerging market currencies is one of several pre-conditions necessary for that investor to realize strong emerging market performance."
2. "Local currency depreciation against the dollar has been a frequent occurrence for U.S. investors in emerging markets. U.S. investors have consistently seen large percentages of their returns erased by currency depreciation. This is true even for long-term investors."
3. "Historically, the addition of emerging market stocks to a U.S. equity portfolio such as the S&P 500 Index has reduced volatility; volatility has also been reduced when emerging market stocks are combined with an international portfolio such as the MSCI EAFE Index."
4. "Although correlations among emerging markets can change over the short term, such correlations show evidence of stability over the long term. Thus, an emerging markets portfolio that lies on the efficient frontier in one period tends to remain close to the frontier in subsequent periods."

Determine whether *each* of Houston's four comments is correct or incorrect. If incorrect, **give one** reason why the comment is incorrect.

Answer Question 4 in the Template provided on pages 19 and 20.

(8 minutes)

Answer Question 4 on This Page

Template for Question 4

Houston's four comments	Determine whether <i>each</i> of Houston's four comments is correct or incorrect (circle one for <i>each</i> comment)	If incorrect, give <i>one</i> reason why the comment is incorrect
<p>1. "For an investor holding only developed market equities, the existence of stable emerging market currencies is one of several pre-conditions necessary for that investor to realize strong emerging market performance."</p>	<p>Correct</p> <p>Incorrect</p>	
<p>2. "Local currency depreciation against the dollar has been a frequent occurrence for U.S. investors in emerging markets. U.S. investors have consistently seen large percentages of their returns erased by currency depreciation. This is true even for long-term investors."</p>	<p>Correct</p> <p>Incorrect</p>	

Template for Question 4 continued on page 20

Answer Question 4 on This Page

Template for Question 4 (continued)

Houston's four comments	Determine whether <i>each</i> of Houston's four comments is correct or incorrect (circle one for <i>each</i> comment)	If incorrect, give <i>one</i> reason why the comment is incorrect
<p>3. "Historically, the addition of emerging market stocks to a U.S. equity portfolio such as the S&P 500 Index has reduced volatility; volatility has also been reduced when emerging market stocks are combined with an international portfolio such as the MSCI EAFE Index."</p>	<p>Correct</p> <p>Incorrect</p>	
<p>4. "Although correlations among emerging markets can change over the short term, such correlations show evidence of stability over the long term. Thus, an emerging markets portfolio that lies on the efficient frontier in one period tends to remain close to the frontier in subsequent periods."</p>	<p>Correct</p> <p>Incorrect</p>	

QUESTION 5 HAS FIVE PARTS (A, B, C, D, E) FOR A TOTAL OF 16 MINUTES.

Robert Houston is investigating whether emerging market equity returns are related to returns from developed equity markets. Using data from the most recent 90 months, Houston regressed emerging market equity returns, measured by the International Finance Corporation (IFC) Composite Index, on MSCI EAFE Index (EAFE) and S&P 500 Index (S&P 500) returns. The regression output is given in Exhibit 5-1 and selected data from the Student's *t*-distribution are shown in Exhibit 5-2.

**Exhibit 5-1
Regression Output
IFC Composite Index**

Regression Statistics					
Multiple <i>R</i>					0.525
<i>R</i> -squared					0.276
Adjusted <i>R</i> -squared					0.260
Standard Error of Estimate					11.150
Observations					90

ANOVA	Degrees of Freedom (df)	Sum of Squares (SS)	Mean Sum of Squares (MS)	<i>F</i>	Significance <i>F</i>
Regression	2	4263.026	2131.5130	17.146	0.0001
Residual	87	11188.299	124.3144		
Total	89	15451.325			

	Coefficients	Standard Error	<i>t</i>-Statistic
Intercept	-0.391	1.292	-0.302
EAFE	0.318	0.169	1.885
S&P 500	0.574	0.204	2.814

**Exhibit 5-2
Selected Data
from the Student's *t*-Distribution
(degrees of freedom = df, one-tailed probabilities = *p*)**

df	<i>p</i> = 0.050	<i>p</i> = 0.025	<i>p</i> = 0.010
87	1.667	1.987	2.370

Referring to Exhibit 5-1, Houston concludes:

“The *F*-statistic indicates that equity returns from emerging markets are significantly related to both U.S. equity market returns and non-U.S. developed equity market returns at the 0.05 significance level.”

- A. **State** whether Houston's conclusion about the F -statistic is correct or incorrect. **Justify** your response with *one* reason.

(3 minutes)

In an effort to improve the explanatory power of the regression, Houston separates the MSCI EAFE Index into the Pacific Basin and European markets. He also replaces the S&P 500 Index with separate indexes of large-capitalization equities and small-capitalization equities. Using these additional variables, the regression's R -squared changes from 0.276 (Exhibit 5-1) to 0.295. The regression's adjusted R -squared changes from 0.260 (Exhibit 5-1) to 0.242.

- B. **Contrast** the response of R -squared and adjusted R -squared to the addition of independent variables to a regression model. **State** whether the additional variables have improved the explanatory power of Houston's regression.

(3 minutes)

Houston observes that, in his expanded regression model, the F -statistic remains highly significant, but the t -statistics on all of the independent variables indicate that none are statistically significant at the 0.05 level.

- C. **Determine** the *most likely* cause of the result observed by Houston. **Recommend** *one* action that Houston should take to prevent this result.

(3 minutes)

Houston also believes that emerging market returns may have a significant month-of-year effect, and he decides to examine this issue further.

- D. **Identify** and **describe** the new variables that should be added to Houston's regression model to test his belief about a month-of-year effect in emerging market returns.

(3 minutes)

After examining his final regression results, Houston questions how he could determine whether the model suffers from the problems of heteroskedasticity and positive serial correlation.

- E. **Identify** the evidence that would *most* directly suggest the presence of *each* of the following two problems in a regression model:

- i. Heteroskedasticity
- ii. Positive serial correlation

Recommend *one* method for correcting *each* problem.

Answer Question 5-E in the Template provided on page 31.

(4 minutes)

Answer Question 5 on This Page

Template for Question 5-E

Two problems	Identify the evidence that would <i>most</i> directly suggest the presence of <i>each</i> of the two problems in a regression model	Recommend <i>one</i> method for correcting <i>each</i> problem
i. Heteroskedasticity		
ii. Positive serial correlation		

QUESTION 6 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 18 MINUTES.

The Windsor Foundation's Board of Directors has asked Robert Houston to discuss the alternative measures that may be used to judge the risk of an equity portfolio. During his presentation to the Board, Houston made the following three statements:

1. "Probability of shortfall is a useful risk measure because it shows the manager's potential for large losses."
2. "If financial market returns are normally distributed, standard deviation is the most appropriate measure of total risk."
3. "Expected shortfall is not a desirable risk measure because it penalizes performance above the benchmark index's return."

A. **Indicate** whether *each* of Houston's three statements is correct or incorrect. If incorrect, **give one** reason why the statement is incorrect.

Answer Question 6-A in the Template provided on page 37.

(9 minutes)

Houston computes comparative return and risk measures, shown in Exhibit 6-1, for two equity managers, Chariton Partners and Mendon Advisors. When calculating tracking error, Houston made the following assumptions:

- The risk-free rate of return is 5.0 percent.
- The standard deviation of the benchmark index is 15.0 percent.
- The beta of the benchmark index is 1.0.

Exhibit 6-1
Comparative Return and Risk Measures
Chariton Partners and Mendon Advisors

Firm	Average Annual Rate of Return (%)	Standard Deviation (%)	Sharpe Ratio	Residual Standard Deviation (%)	Beta	Tracking Error (%)
Chariton Partners	26.2	20.5	1.03	15.3	1.10	15.4
Mendon Advisors	19.8	11.9	1.24	11.5	0.80	---

B. **Calculate** the tracking error for Mendon Advisors, using only the data in Exhibit 6-1. **Show** your calculations.

(3 minutes)

Houston is particularly interested in the difference in tracking error between Chariton Partners and Mendon Advisors. He forms the following two conclusions:

1. If Chariton Partners has a larger tracking error than Mendon Advisors, that is because Chariton's portfolio has a higher beta.
2. If Chariton Partners has a larger tracking error than Mendon Advisors, that is because Chariton's portfolio has a lower Sharpe ratio.

C. **Indicate** whether *each* of Houston's two conclusions is correct or incorrect. If incorrect, **give one** reason why the conclusion is incorrect.

Note: Your response should address each conclusion independently.

Answer Question 6-C in the Template provided on page 40.

(6 minutes)

Answer Question 6 on This Page

Template for Question 6-A

Houston's three statements	Indicate whether <i>each</i> of Houston's three statements is correct or incorrect (circle one for <i>each</i> statement)	If incorrect, give <i>one</i> reason why the statement is incorrect
1. "Probability of shortfall is a useful risk measure because it shows the manager's potential for large losses."	Correct Incorrect	
2. "If financial market returns are normally distributed, standard deviation is the most appropriate measure of total risk."	Correct Incorrect	
3. "Expected shortfall is not a desirable risk measure because it penalizes performance above the benchmark index's return."	Correct Incorrect	

Answer Question 6 on This Page

Template for Question 6-C

Note: Your response should address each conclusion independently.

Houston's two conclusions	Indicate whether <i>each of</i> Houston's two conclusions is correct or incorrect (circle one for <i>each</i> conclusion)	If incorrect, give <i>one</i> reason why the conclusion is incorrect
1. If Chariton Partners has a larger tracking error than Mendon Advisors, that is because Chariton's portfolio has a higher beta.	Correct Incorrect	
2. If Chariton Partners has a larger tracking error than Mendon Advisors, that is because Chariton's portfolio has a lower Sharpe ratio.	Correct Incorrect	

QUESTION 7 HAS TWO PARTS (A, B) FOR A TOTAL OF 9 MINUTES.

Robert Houston is interviewing the Windsor Foundation's performance consultant, who has analyzed the performance of Windsor's two fixed income managers—Broughton Asset Management and Matthews Advisors—compared to the consultant's broad bond market index. The consultant has prepared an attribution analysis, shown in Exhibit 7-1, of the two manager's recent performance. Houston recognizes that the consultant's analysis is based on performance comparisons for one quarter, but he believes that her analysis can help him gain preliminary insights into the relative performance of the two managers.

Exhibit 7-1
Performance Attribution Analysis
Two Fixed Income Managers for the Windsor Foundation
Quarter Ending 31 March 2003

	Evaluation Period Returns (%)		
	Broughton Asset Management	Matthews Advisors	Broad Bond Market Index
I. Interest Rate Effect			
1. Expected	0.65	0.22	0.44
2. Unexpected	0.72	0.30	0.55
Subtotal	1.37	0.52	0.99
II. Interest Rate Management Effect			
3. Duration	0.15	-0.13	0.00
4. Convexity	-0.03	-0.06	0.00
5. Yield Curve Shape Change	0.04	0.13	0.00
Subtotal (options adjusted)	0.16	-0.06	0.00
III. Other Management Effects			
6. Sector/Quality	-0.09	1.15	0.00
7. Bond Selectivity	0.12	-0.08	0.00
8. Transaction Costs	0.00	0.00	0.00
Subtotal	0.03	1.07	0.00
IV. Trading Activity Return	0.10	0.08	0.00
V. Total Return (sum of I, II, III, and IV)	1.66	1.61	0.99

The consultant also included in her report the following summary of the investment management strategies of the two firms:

- Broughton Asset Management states that its investment strategy relies on active interest rate management decisions to outperform the benchmark index. Broughton also seeks to identify individual issues that are mispriced. Therefore, the resulting portfolio return should exceed the total return of the benchmark index.

- Matthews Advisors states that its investment strategy is to enhance portfolio returns by identifying undervalued sectors while maintaining a neutral interest rate exposure relative to the benchmark index. Matthews believes it is not possible to enhance returns through individual bond selection on a consistent basis.

Houston decides to use Exhibit 7-1 as a basis for drawing tentative conclusions about the ability of Broughton Asset Management and Matthews Advisors to execute their stated investment strategies.

- A. **Evaluate** the extent to which Broughton Asset Management's performance results can be attributed to *each* of Broughton's two stated investment strategies:
- i. Relying on active interest rate management decisions
 - ii. Identifying individual issues that are mispriced

Cite one piece of evidence from Exhibit 7-1 to support *each* of your responses.

(6 minutes)

- B. **Evaluate** the extent to which Matthews Advisors' performance results can be attributed to its stated investment strategy of identifying undervalued sectors. **Cite one** piece of evidence from Exhibit 7-1 to support your response.

(3 minutes)

QUESTION 8 HAS ONE PART FOR A TOTAL OF 12 MINUTES.

Matthews Advisors, an active sector rotation fixed income manager for the Windsor Foundation, claims compliance with the Global Investment Performance Standards (GIPS®). In its annual performance report to the Investment Committee of Windsor, Matthews made the following five statements:

1. “Matthews Advisors does not include benchmark returns in its performance report.”
2. “To show performance returns since our inception, Matthews Advisors has linked non-GIPS-compliant performance to our five years of GIPS-compliant returns.”
3. “Matthews Advisors manages the fixed income portion of its employee pension plan using an active sector rotation strategy and includes the account in the composite shown. This account does not pay a management fee.”
4. “Matthews Advisors uses swap instruments to enhance returns in fixed income portfolios under management.”
5. “All the portfolio managers from the fixed income investment advisor Mayer, Garcia and Nicks (MGN) joined Matthews Advisors in May 2001. The MGN performance record has been linked to the performance record of Matthews Advisors.”

Explain *one* additional requirement that Matthews Advisors must satisfy for *each* of Matthews’ statements 2 through 5 to be in compliance with the Global Investment Performance Standards (GIPS).

Note: Statement 1 in the Template for Question 8 is completed as an example.

Answer Question 8 in the Template provided on pages 49 and 50.

(12 minutes)

Answer Question 8 on This Page

Template for Question 8

Note: Statement 1 in the Template is completed as an example.

<p align="center">Five statements in Matthews Advisors' annual performance report</p>	<p align="center">Explain <i>one</i> additional requirement that Matthews Advisors must satisfy for <i>each</i> of Matthews' statements 2 through 5 to be in compliance with the Global Investment Performance Standards (GIPS)</p>
<p align="center">Example:</p> <p>1. "Matthews Advisors does not include benchmark returns in its performance report."</p>	<p align="center">Example:</p> <p>According to GIPS, Matthews has discretion in the selection of an appropriate benchmark, but if Matthews has determined that no benchmark is appropriate, the firm must explain why benchmark returns are not disclosed.</p>
<p>2. "To show performance returns since our inception, Matthews Advisors has linked non-GIPS-compliant performance to our five years of GIPS-compliant returns."</p>	
<p>3. "Matthews Advisors manages the fixed income portion of its employee pension plan using an active sector rotation strategy and includes the account in the composite shown. This account does not pay a management fee."</p>	

Template for Question 8 continued on page 50

Answer Question 8 on This Page

Template for Question 8 (continued)

Five statements in Matthews Advisors' annual performance report	Explain <i>one</i> additional requirement that Matthews Advisors must satisfy for <i>each</i> of Matthews' statements 2 through 5 to be in compliance with the Global Investment Performance Standards (GIPS)
4. "Matthews Advisors uses swap instruments to enhance returns in fixed income portfolios under management."	
5. "All the portfolio managers from the fixed income investment advisor Mayer, Garcia and Nicks (MGN) joined Matthews Advisors in May 2001. The MGN performance record has been linked to the performance record of Matthews Advisors."	

Questions 9 through 11 relate to Lisa Bavier, Andrew Campbell, and the Bavier-Campbell Trust. A total of 47 minutes is allocated to these questions. Candidates should answer these questions in the order presented.

QUESTION 9 HAS TWO PARTS (A, B) FOR A TOTAL OF 22 MINUTES.

Both parents of 12-year-old Andrew Campbell recently died in an accident. The parents had been supporting Andrew and his grandmother, Lisa Bavier, aged 77. The parents' accumulated assets prior to their death were \$640,000 in a diversified common stock (both domestic and international) portfolio and \$360,000 in the common stock of Petrie Enterprises, a publicly traded company founded by Bavier's husband. The parents' assets will now be held in a single U.S.-based trust—the Bavier-Campbell Trust (the Trust)—to benefit both Bavier and Campbell. In addition to these assets, the Trust received life insurance proceeds of \$2,000,000.

Petrie Enterprises will continue to provide medical coverage for Bavier until her death. Campbell has government-provided healthcare until he reaches age 22. Campbell will attend university for four years beginning at age 18. In addition to normal living expenses, initial annual university costs are projected to be \$38,000, rising 8 percent annually.

According to the provisions of the Trust document:

- The Trust should provide for Bavier's and Campbell's annual living expenses, currently estimated to total \$78,000 per year (after tax). The Trust portfolio should earn a return sufficient to cover the living expenses of Bavier and Campbell, taking taxes into consideration and allowing for both inflation (expected to be 2 percent annually) and modest growth (1 percent annually). Income and capital gains are taxed at 30 percent, and this tax treatment is not expected to change.
- The Trust may, at the trustee's discretion, distribute a portion of the Trust assets to meet Bavier's and Campbell's health, education, or other essential needs.
- The Trust should limit shortfall risk (defined as expected total return minus two standard deviations) to no lower than a -10 percent return in any one year.
- Campbell is entitled to receive distributions from the Trust until he reaches age 22. At that point, the Trust will continue making distributions for Bavier's living expenses.
- Upon Bavier's death, the Trust's assets will go to Campbell, provided he is at least 32 years old. If Campbell is not yet aged 32 when Bavier dies, the Trust will then distribute income and principal to Campbell until he reaches age 32, at which point the Trust will terminate and the assets will be distributed to Campbell.

- The Petrie Enterprises common stock cannot be sold without Bavier's approval, as long as she is alive. Bavier has stated her strong desire to retain the Petrie stock indefinitely, to fulfill a promise she made to her husband.
- The Trust must hold in cash equivalents an amount equal to nine months of living expenses (on a pre-tax basis) for Bavier and Campbell.
- In the unlikely event that Campbell dies before Bavier, distributions will continue for Bavier's benefit until she dies, at which point any remaining Trust assets will be distributed to several charities.

As a result of poor financial advice, Bavier lost all of her inheritance from her husband's estate. Because her assets are nearly depleted, she wants to minimize any future losses in the Trust portfolio; in fact, she has expressed serious concerns about the Trust's ability to meet Campbell's and her needs during her lifetime.

- A. **Prepare** the objectives section of an appropriate investment policy statement for the Bavier-Campbell Trust. **Show** any appropriate calculations.

Note: Each objective in your response should address specific circumstances of the Trust and include appropriate supporting justification.

(7 minutes)

- B. **Prepare** the constraints section of an appropriate investment policy statement for the Bavier-Campbell Trust. **Show** any appropriate calculations.

Note: Each constraint in your response should address specific circumstances of the Trust and include appropriate supporting justification.

(15 minutes)

QUESTION 10 HAS ONE PART FOR A TOTAL OF 7 MINUTES.

After preparing the investment policy statement for the Bavier-Campbell Trust, the trustee considers which of the five alternative portfolios described in Exhibit 10-1 will best meet the Trust's objectives and constraints.

**Exhibit 10-1
Five Alternative Portfolios
Bavier-Campbell Trust
15 May 2003**

Asset Class	Alternative Portfolios Asset Allocation Percentages (%)				
	A	B	C	D	E
Cash Equivalents	2	4	10	2	5
U.S. Intermediate Bonds	10	43	38	60	32
U.S. Long-term Bonds	50	10	11	5	10
U.S. Common Stocks	21	25	22	12	30
International Common Stocks	5	6	7	9	11
Petrie Enterprises Common Stock	12	12	12	12	12
Total	100	100	100	100	100
Portfolio Measures	Alternative Portfolios				
	A	B	C	D	E
Expected Annual Total Return (before tax)	6.89%	6.74%	6.52%	6.06%	7.23%
Expected Standard Deviation	8.30%	7.71%	7.36%	6.53%	8.79%

Recommend which *one* of the five alternative portfolios in Exhibit 10-1 is *most* appropriate for the Bavier-Campbell Trust. **Justify** your recommendation with *three* reasons.

(7 minutes)

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

Ten years have now passed, and the Bavier-Campbell Trust portfolio returns over the previous ten years have failed to meet expectations. Lower returns, coupled with Lisa Bavier's and Andrew Campbell's living expenses and Campbell's college costs, have combined to reduce the value of the Trust portfolio to \$2,000,000.

Bavier, now 87, recently moved to an assisted living care facility. With her health failing, doctors have determined she will live no longer than three years and will require full-time care for the remaining time until her death. Bavier's medical expenses are covered by insurance, but her care and living expenses now require \$84,000 per year (after tax and adjusted for inflation) from the Trust. Inflation is expected to be 3 percent annually over the next several years. Bavier has no other support and depends on the Trust to meet her financial needs. She has continued to express her concern that the Trust will not provide enough distributions to cover her expenses during her remaining lifetime. She still wishes to retain the Petrie Enterprises common stock, which now comprises 15 percent of the Trust portfolio and has an expected annual yield of 2 percent over the next several years. Legal constraints have not changed and the Trust still requires nine months of living expenses (on a pre-tax basis) to be held in reserve.

Campbell, now 22, is a recent college graduate and has accepted a job with Elkhorn Consulting Partners. In the job offer, Elkhorn agreed to pay the cost of Campbell's M.B.A. degree. Campbell also has the opportunity to buy a partnership stake in the company by making equal annual payments of \$600,000 per year for five years. He will begin making those payments in ten years. Campbell's starting salary is sufficient to cover his living expenses.

Although Campbell is concerned about providing for Bavier, he believes that with the appropriate asset allocation, the Trust assets should be sufficient to take care of her expenditures until she dies and provide the growth he needs to meet his partnership obligations. Campbell views growth from the Trust to be essential in meeting his long-term goals, one of which is to have the Trust assets amount to \$3,000,000 by the time his first partnership installment payment is due. The internal rate of return necessary to achieve both Campbell's and Bavier's goals is 7.88 percent. Assuming that Campbell lives longer than Bavier, the individual assets in the Trust will be distributed to Campbell upon termination of the Trust; the Trust portfolio will become Campbell's portfolio.

The trustee hopes to gain additional understanding of Bavier's and Campbell's attitudes about risk by developing three situational profiles:

- Source of wealth
- Measure of wealth
- Stage of life

- A. **Determine** whether Bavier and Campbell are generally alike or different with respect to *each* of the three situational profiles. **Justify** *each* of your responses with *one* reason.

Answer Question 11-A in the Template provided on page 69.

(6 minutes)

During an interview with the trustee, Bavier made the following two statements:

- “I have been very pleased with returns from the Petrie stock over the past two years and I am certain that it will be a superior performer in the future.”
- “I am pleased with the returns from the Petrie stock because I have specific uses for that money. For that reason, I certainly want the Trust to continue owning the Petrie stock.”

- B. **Identify** which principle of behavioral finance is *most* consistent with *each* of Bavier’s two statements. **Justify** *each* of your responses with *one* reason.

(6 minutes)

The trustee believes that circumstances have changed enough to warrant revising certain components of the investment policy statements for Campbell and the Trust.

- C. **Formulate**, to reflect the changed circumstances of Bavier and Campbell, revised statements of the willingness to take risk for *each* of the following:

- i. The Bavier-Campbell Trust
- ii. Campbell

Note: Your response should include appropriate supporting justification.

(6 minutes)

Answer Question **11** on This Page

Template for Question 11-A

Three situational profiles	Determine whether Bavier and Campbell are generally alike or different with respect to <i>each</i> of the three situational profiles (circle one for <i>each</i> profile)	Justify <i>each</i> of your responses with <i>one</i> reason
Source of wealth	Alike Different	
Measure of wealth	Alike Different	
Stage of life	Alike Different	

Questions 12 and 13 relate to Catherine Marco. A total of 35 minutes is allocated to these questions. Candidates should answer these questions in the order presented.

QUESTION 12 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 27 MINUTES.

Catherine Marco is a portfolio manager with Mouton Investments, Inc., a regional money management firm. She is considering investments in alternative assets and decides to research the following three questions about long-short strategies and hedge funds:

1. How can the alpha generated from a long-short strategy in one asset class be transported to another asset class?
2. What are the *three* major quantifiable sources of risk that a fund of hedge funds manager must consider in risk monitoring?
3. For a fund of hedge funds, how does risk-based leverage differ from accounting-based leverage?

A. **Formulate** *one* correct response to *each* of Marco's three questions.

(9 minutes)

Marco decides to explore various hedge fund investment strategies and reviews the following three strategy components:

1. Buy stocks after positive earnings surprise announcements, anticipating that the stock price will rise in the short term.
2. Establish appropriate long and short positions in stocks of companies that have announced a merger or acquisition or are rumored to be considering such a transaction.
3. Use neural networks to detect patterns in historical data.

B. **Identify** the hedge fund investment strategy that is best characterized by *each* of the three strategy components reviewed by Marco.

(3 minutes)

Following her research, Marco applies her findings to the situation of an individual client. This client currently holds only traditional equity and fixed income investments and is willing to consider investing in alternative assets to lower the risk of his portfolio. Marco forms the following five conclusions about investing in alternative assets for this client:

1. Investing in a fund of hedge funds is likely to increase the client's portfolio diversification and allow the client's portfolio to have exposure to a wide variety of hedge funds that may not otherwise be available to the client.
 2. A lack of transparency and the fund manager's inability to add value through portfolio construction are both disadvantages of investing in a fund of hedge funds.
 3. Because a directional hedge fund is expected to exhibit a lower dispersion of returns than a non-directional hedge fund, a directional hedge fund is a more appropriate investment for this client.
 4. One appropriate hedge fund investment strategy for this client is a macro hedge fund, which is likely to provide increased returns with a relatively low standard deviation of returns.
 5. Another approach that is consistent with the client's objectives is to use an equitized long-short strategy, which can be expected to neutralize market risk.
- C. **Judge** whether *each* of Marco's five conclusions is correct or incorrect. If incorrect, **give one** reason why the conclusion is incorrect.

Answer Question 12-C in the Template provided on pages 79 and 80.

(15 minutes)

Answer Question 12 on This Page

Template for Question 12-C

Marco's five conclusions	Judge whether <i>each</i> of Marco's five conclusions is correct or incorrect (circle one for <i>each</i> conclusion)	If incorrect, give <i>one</i> reason why the conclusion is incorrect
1. Investing in a fund of hedge funds is likely to increase the client's portfolio diversification and allow the client's portfolio to have exposure to a wide variety of hedge funds that may not otherwise be available to the client.	<p>Correct</p> <p>Incorrect</p>	
2. A lack of transparency and the fund manager's inability to add value through portfolio construction are both disadvantages of investing in a fund of hedge funds.	<p>Correct</p> <p>Incorrect</p>	
3. Because a directional hedge fund is expected to exhibit a lower dispersion of returns than a non-directional hedge fund, a directional hedge fund is a more appropriate investment for this client.	<p>Correct</p> <p>Incorrect</p>	

Template for Question 12-C continued on page 80

Answer Question 12 on This Page

Template for Question 12-C (continued)

<p style="text-align: center;">Marco's five conclusions</p>	<p style="text-align: center;">Judge whether <i>each</i> of Marco's five conclusions is correct or incorrect (circle one for <i>each</i> conclusion)</p>	<p style="text-align: center;">If incorrect, give <i>one</i> reason why the conclusion is incorrect</p>
<p>4. One appropriate hedge fund investment strategy for this client is a macro hedge fund, which is likely to provide increased returns with a relatively low standard deviation of returns.</p>	<p style="text-align: center;">Correct</p> <p style="text-align: center;">Incorrect</p>	
<p>5. Another approach that is consistent with the client's objectives is to use an equitized long-short strategy, which can be expected to neutralize market risk.</p>	<p style="text-align: center;">Correct</p> <p style="text-align: center;">Incorrect</p>	

QUESTION 13 HAS TWO PARTS (A, B) FOR A TOTAL OF 8 MINUTES.

Catherine Marco is also responsible for formulating economic commentary for Mouton Investments, Inc. After updating key economic indicators for her latest research report, Marco presents the following two statements to Mouton's Board of Directors:

1. "Forecasts of a near-term credit contraction with a decline in the money supply and a reduction in the aggregate liabilities of banks is likely to result in no expansion of bank loan activity and no increase in nominal disposable income."
2. "When economic growth increases, industrial production is likely to expand at a faster rate than the domestic money supply."

A. **Judge** whether *each* of Marco's two statements is correct or incorrect. If incorrect, **give one** reason why the statement is incorrect.

Answer Question 13-A in the Template provided on page 85.

(4 minutes)

Marco anticipates a change in the domestic economy from stable inflation to rising inflation, and presents the following two recommendations to the Board:

1. "Retail consumption should decrease because rising inflation will drive prices higher. I expect equities in the retail sector to underperform the market, so we should recommend that our clients reduce their exposure to this sector."
2. "Because of the changing inflationary environment, we should recommend that our clients reduce their current exposures to international equities relative to domestic equities."

B. **Evaluate** whether *each* of Marco's two recommendations is appropriate or inappropriate, if the inflation rate increases. If inappropriate, **justify** with *one* reason why the recommendation is inappropriate.

Answer Question 13-B in the Template provided on page 86.

(4 minutes)

Answer Question **13** on This Page

Template for Question 13-A

Marco's two statements	Judge whether <i>each</i> of Marco's two statements is correct or incorrect (circle one for <i>each</i> statement)	If incorrect, give <i>one</i> reason why the statement is incorrect
1. "Forecasts of a near-term credit contraction with a decline in the money supply and a reduction in the aggregate liabilities of banks is likely to result in no expansion of bank loan activity and no increase in nominal disposable income."	Correct Incorrect	
2. "When economic growth increases, industrial production is likely to expand at a faster rate than the domestic money supply."	Correct Incorrect	

Answer Question 13 on This Page

Template for Question 13-B

Marco's two recommendations	Evaluate whether <i>each</i> of Marco's two recommendations is appropriate or inappropriate, if the inflation rate increases (circle one for <i>each</i> recommendation)	If inappropriate, justify with <i>one</i> reason why the recommendation is inappropriate
<p>1. "Retail consumption should decrease because rising inflation will drive prices higher. I expect equities in the retail sector to underperform the market, so we should recommend that our clients reduce their exposure to this sector."</p>	<p>Appropriate</p> <p>Inappropriate</p>	
<p>2. "Because of the changing inflationary environment, we should recommend that our clients reduce their current exposures to international equities relative to domestic equities."</p>	<p>Appropriate</p> <p>Inappropriate</p>	

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