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Topic Break Down

Topic	No. of Questions
Topic 1, Ethical and Professional Standards	75
Topic 2, Asset Valuation	66
Topic 3, Portfolio Management and Wealth Planning	241
Total	382

QUESTION NO: 1

Jerry Edwards is an analyst with DeLeon Analytics. He is currently advising the CFO of Anderson

Corp., a multinational manufacturing corporation based in Newark, New Jersey, USA. Jackie Palmer is Edwards's assistant. Palmer is well versed in risk management, having worked at a large multinational bank for the last ten years prior to coming to Anderson.

Anderson has received a \$2 million note with a duration of 4.0 from Weaver Tools for a shipment delivered last week. Weaver markets tools and machinery from manufacturers of Anderson's size. Edwards states that in order to effectively hedge the price risk of this instrument, Anderson should sell a series of interest rate calls. Palmer states that an alternative hedge for the note would be to enter an interest rate swap as the fixed-rate payer.

As well as selling products from a Swiss plant in Europe, Anderson sells products in Switzerland itself. As a result, Anderson has quarterly cash flows of 12,000,000 Swiss franc (CHF). In order to convert these cash flows into dollars, Edwards suggests that Anderson enter into a currency swap without an exchange of notional principal. Palmer contacts a currency swap dealer with whom they have dealt in the past and finds the following exchange rate and annual swap interest rates:

Exchange Rate (CHF per dollar) 1.24

Swap interest rate in U.S. dollars 2.80%

Swap interest rate in Swiss franc 6.60%

Discussing foreign exchange rate risk in general, Edwards states that it is transaction exposure that is most often hedged, because the amount to be hedged is contractual and certain. Economic exposure, he states, is less certain and thus harder to hedge.

To finance their U.S. operations, Anderson issued a \$10 million fixed-rate bond in the United States five years ago. The bond had an original maturity of ten years and now has a modified duration of 4.0. Edwards states that Anderson should enter a 5-year semiannual pay floating swap with a notional principal of about \$11.4 million to take advantage of falling interest rates. The duration of the fixed-rate side of the swap is equal to 75% of its maturity or 3.75 ($= 0.75 \times 5$). The duration of the floating side of the swap is 0.25. Palmer states that Anderson's position in the swap will have a negative duration.

For another client of DeLeon, Edwards has assigned Palmer the task of estimating the interest rate sensitivity of the client's portfolios. The client's portfolio consists of positions in both U.S. and British bonds. The relevant information for estimating (he duration contribution of the British bond and the portfolio's total duration is provided below.

U.S. dollar bond \$275,000

British bond \$155,000

British yield beta 1.40

Duration of U.S. bond 4.0

Duration of British bond 8.5

When discussing portfolio management with clients, Edwards recommends the use of emerging market bonds to add value to a core-plus strategy. He explains the characteristics of emerging market debt to Palmer by stating:

1. "The performance of emerging market debt has been quite resilient over time. After crises in the debt markets, emerging market bonds quickly recover after a crisis, so long-term returns can be poor."

2. "Emerging market debt is quite volatile due in part to the nature of political risk in these markets."

It is therefore important that the analyst monitor the risk of these markets. I prefer to measure the risk of emerging market bonds with the standard deviation because it provides the best representation of risk in these markets."

If Anderson enters a properly structured currency swap to convert the CHF 12,000,000 to dollars, the amount they will receive is closest to:

A. \$4,105,572.

B. \$7,071,429.

C. \$9,677,419.

ANSWER: A**Explanation:**

\$4,105,572 is correct because the CHF12,000,000 quarterly receipt represents the CHF interest leg of a currency swap with no exchange of principal. First, derive the implied CHF notional: CHF12,000,000 divided by the quarterly CHF swap rate of 6.60% / 4 equals CHF727,272,727. The stated spot rate is CHF1.24 per USD, so converting this notional into dollars gives USD586,510,264 (CHF727,272,727 / 1.24). Anderson receives the quarterly payment on the U.S.-dollar leg, calculated using the annual USD swap rate of 2.80%. Thus, the dollar receipt is USD586,510,264 × (2.80% / 4), or approximately USD4,105,572. Because the swap is specified as having no notional-principal exchange, only the periodic interest cash flows are exchanged; the calculated dollar amount is therefore the relevant quarterly cash flow rather than the converted value of CHF12,000,000 itself. This construction transforms Anderson's CHF-denominated periodic cash flow into a known dollar-denominated periodic receipt at the swap's agreed terms. Currency swaps commonly exchange interest payments in two currencies and may be structured either with or without notional exchanges; see the [CME Group overview of FX swaps](#) and the [CFA Institute derivative-markets refresher](#).

QUESTION NO: 2

Shirley Riley, CFA, has just been promoted, from vice president of trading to chief investment officer (CIO) at Crane & Associates, LLC (CA), a large investment management firm. Riley has been with CA for eight years, but she has much to learn as she assumes her new duties as CIO. Riley has decided to hire Denny Simpson, CFA, as the new compliance officer for CA. Riley and Simpson have been reviewing procedures and policies throughout the firm and have discovered several potential issues. Communications with Clients

Portfolio managers are encouraged to communicate with clients on a regular basis. At a minimum, managers are expected to contact clients on a quarterly basis to review portfolio performance. Each client must have an investment policy statement (IPS) created when their account is opened, specifying the objectives and constraints for their portfolio. IPSs are reviewed at client request at any time. Any time market conditions dictate a change in the investment style or strategy of a client portfolio, the client is notified immediately by phone or email.

Employee Incentive Program

CA offers several incentive programs to employees. One of the most popular of these programs is the CA IPO program. Whenever CA is involved in an initial public offering (IPO), portfolio managers are allowed to participate. The structure is simple—for every 100 shares purchased on behalf of a client, the manager is awarded five shares for his own account. The manager is thus rewarded for getting an IPO sold and at the same time is able to share in the results of the IPO. Any-time shares are remaining 72 hours before the IPO goes public, other employees are allowed to participate on a first-come, first-serve basis. Employees seem to appreciate this opportunity, but CA does not have exact numbers on employee participation in the program.

Private Equity Fund

CA has a private equity fund that is internally managed. This fund is made available only to clients with more than \$5 million in assets managed by CA, a policy that is fully disclosed in CA's marketing materials. Roughly one-third of the fund's assets are invested in companies that are either very small capitalization or thinly traded (or both). The pricing of these securities for monthly account statements is often difficult. CA support staff get information from different sources— sometimes using third party services, sometimes using CA valuation models. In some instances, a manager of the private equity fund will enter an order during the last trading hour of the month to purchase 100 shares of one of these small securities at a modest premium to the last trade price. If the trade gets executed, that price can then be used on the account statements. The small size of these trades does not significantly affect the fund's overall position in any particular company holding, which is typically several thousand shares.

Soft Dollar Usage

Several different managers at CA use independent research in developing investment ideas. One of the more popular research services among CA managers is "Beneath the Numbers (BTN)," which focuses on potential accounting abuses at prominent companies. This service often provides early warnings of problems with a stock, allowing CA managers the opportunity to sell their clients' positions before a negative surprise lowers the price. Stocks covered by BTN are typically widely held in CA client accounts. Managers at CA have been so happy with BTN that they have also subscribed to a new research product provided by the same authors—"Beneath the Radar (BTR)." BTR recommends small capitalization securities that are not large enough to attract much attention from large institutional investors. The results of BTR's recommendations are mixed thus far, but CA managers are willing to be patient.

As they discuss these issues, Riley informs Simpson that she is determined to bring CA into full compliance with the CFA Institute's "Asset Manager Code of Professional Conduct." The following questions should be answered with the Asset Manager Code as a guide.

Indicate whether CA's policies related to its IPO program, specifically allowing portfolio manager participation and employee participation, are consistent with the Asset Manager Code of Professional Conduct.

A. Policies on both portfolio manager and employee participation in IPOs are not consistent with the Asset Manager Code of Professional Conduct.

B. The employee participation in IPOs policy is consistent with the Asset Manager Code, as is the portfolio manager's policy on participation in IPOs.

C. The portfolio manager's policy on IPOs is not consistent with the Asset Manager Code, however the employee policy on IPOs is consistent with the Asset Manager Code.

ANSWER: A

Explanation:

Policies on both portfolio manager and employee participation in IPOs are not consistent with the Asset Manager Code of Professional Conduct. The Code requires an asset manager to place client interests before the firm's and employees' interests, and to establish policies that manage conflicts of interest fairly. Awarding a portfolio manager personal IPO shares in direct proportion to the number of shares purchased for clients gives that manager a powerful financial incentive to seek larger client allocations. This arrangement can impair the manager's independence in deciding whether an IPO is suitable for a particular client and how a limited allocation should be distributed.

Employee participation is also not compliant as administered. Although employee access to an IPO may be possible under a properly controlled program, client accounts must receive priority, and the firm must maintain effective procedures, supervision, and records to demonstrate that employees did not receive preferential treatment. A first-come, first-served employee allocation process without evidence of client-priority controls, combined with CA's inability to identify exact employee participation, does not provide the monitoring necessary to protect clients or manage the conflict. The applicable client-first and conflict-management principles are set out in the CFA Institute's [Asset Manager Code](#) and are consistent with its [Code and Standards guidance](#).

QUESTION NO: 3

Gabrielle Reneau, CFA, and Jack Belanger specialize in options strategies at the brokerage firm of Damon and Damon. They employ fairly sophisticated strategies to construct positions with limited risk, to profit from future volatility estimates, and to exploit arbitrage opportunities. Damon and Damon also provide advice to outside portfolio managers on the appropriate use of options strategies. Damon and Damon prefer to use, and recommend, options written on widely traded indices such as the S&P 500 due to their higher liquidity. However, they also use options written on individual stocks when the investor has a position in the underlying stock or when mispricing and/or trading depth exists.

In order to trade in the one-year maturity puts and calls for the S&P 500 stock index, Reneau and Belanger contact the chief economists at Damon and Damon, Mark Blair and Fran Robinson. Blair recently joined Damon and Damon after a successful stint at a London investment bank. Robinson has been with Damon and Damon for the past ten years and has a considerable record of success in forecasting macroeconomic activity. In his forecasts for the U.S. economy over the next year, Blair is quite bullish, for both the U.S. economy and the S&P 500 stock index. Blair believes that the U.S. economy will grow at 2% more than expected over the next year. He also states that labor productivity will be higher than expected, given increased productivity through the use of technological advances. He expects that these technological advances will result in higher earnings for U.S. firms over the next year and over the long run.

Reneau believes that the best S&P 500 option strategy to exploit Blair's forecast involves two options of the same maturity, one with a low exercise price, and the other with a high exercise price. The beginning stock price is usually below the two option strike prices. She states that the benefit of this strategy is that the maximum loss is limited to the difference between the two option prices.

Belanger is unsure that Blair's forecast is correct. He states that his own reading of the economy is for a continued holding pattern of low growth, with a similar projection for the stock market as a whole. He states that Damon and Damon may want to pursue an options strategy where a put and call of the same maturity and same exercise price are purchased. He asserts that such a strategy would have losses limited to the total cost of the two options.

Reneau and Belanger are also currently examining various positions in the options of Brendan Industries. Brendan Industries is a large-cap manufacturing firm with headquarters in the midwestern United States. The firm has both puts and calls sold on the Chicago Board Options Exchange. Their options have good liquidity for the near money puts and calls and for those puts and calls with maturities less than four months. Reneau believes that Brendan Industries will benefit from the economic expansion forecasted by Mark Blair, the Damon and Damon economist. She decides that the best option strategy to exploit these expectations is for her to pursue the same strategy she has delineated for the market as a whole.

Shares of Brendan Industries are currently trading at \$38. The following are the prices for their exchange-traded options.

<i>Option Type</i>	<i>Strike Price</i>	<i>Maturity</i>	<i>Price</i>
Call	\$35	30 days	\$4.50
Call	\$40	30 days	\$1.50
Put	\$35	30 days	\$1.80
Put	\$40	30 days	\$3.50

As a mature firm in a mature industry, Brendan Industries stock has historically had low volatility. However, Belanger's analysis indicates that with a lawsuit pending against Brendan Industries, the volatility of the stock price over the next 60 days is greater by several orders of magnitude than the implied volatility of the options. He believes that Damon and Damon should attempt to exploit this projected increase in Brendan Industries' volatility by using an options strategy where a put and call of the same maturity and same exercise price are utilized. He advocates using the least expensive strategy possible.

During their discussions, Reneau cites a counter example to Brendan Industries from last year. She recalls that Nano Networks, a technology firm, had a stock price that stayed fairly stable despite expectations to the contrary. In this case, she utilized an options strategy where three different calls were used. Profits were earned on the strategy because Nano Networks' stock price stayed fairly stable. Even if the stock price had become volatile, losses would have been limited. Later that week, Reneau and Belanger discuss various credit option strategies during a lunch time presentation to Damon and Damon client portfolio managers. During their discussion, Reneau describes a credit option strategy that pays the holder a fixed sum, which is agreed upon when the option is written, and occurs in the event that an issue or issuer goes into default. Reneau declares that this strategy can take the form of either puts or calls. Belanger states that this strategy is known as either a credit spread call option strategy or a credit spread put option strategy.

Reneau and Belanger continue by discussing the benefits of using credit options. Reneau mentions that credit options written on an underlying asset will protect against declines in asset valuation. Belanger says that credit spread options protect against adverse movements of the credit spread over a referenced benchmark.

Assume Reneau applies the options strategy used earlier for Nano Networks. Assuming there is a 3-month 45 call on Brendan Industries trading at \$1.00, calculate the maximum gain and maximum loss on this position. Max gain Max loss

- A. \$2.50 -\$2.50
- B. \$5.00 -\$5.00
- C. \$3.00 -\$2.00

ANSWER: A

Explanation:

\$2.50 -\$2.50 is correct because the Nano Networks position is a long call butterfly spread. Using the quoted Brendan Industries calls, the position consists of buying the 35 call for \$4.50, selling two 40 calls for \$1.50 each, and buying the 45 call for \$1.00. Its net initial debit is therefore $\$4.50 - \$3.00 + \$1.00 = \2.50 . This debit is the maximum loss: if the stock finishes at or below \$35, all calls expire worthless; if it finishes at or above \$45, the gains and losses on the calls offset, leaving the initial debit as the loss.

The maximum gain occurs when Brendan Industries finishes exactly at the middle strike price of \$40 at expiration. At that price, the long 35 call has intrinsic value of \$5.00, while both 40 calls and the 45 call expire with no intrinsic value. After subtracting the \$2.50 net cost, the profit is \$2.50. Thus, the strategy has a symmetric maximum gain of \$2.50 and maximum

loss of -\$2.50. A butterfly is designed to benefit when the underlying price remains near the middle strike, while strictly bounding downside exposure. See the CFA Institute's [Derivative Strategies refresher reading](#) and the [Options Industry Council's long call butterfly description](#).

QUESTION NO: 4

A manager of a global equity portfolio believes that the Japanese yen will appreciate relative to the US dollar. The manager wishes to obtain yen exposure without changing the portfolio's allocation to Japanese equities.

The most appropriate action is to:

- A. Buy yen forward and sell US dollars forward.
- B. Sell yen forward and buy US dollars forward.
- C. Purchase Japanese equities and leave currency exposure unhedged.

ANSWER: A

Explanation:

The correct action is to buy yen forward and sell US dollars forward. This transaction creates a long yen currency position while leaving the underlying equity allocation unchanged. If the yen appreciates relative to the US dollar, the forward position generates a gain that reflects the currency view.

Purchasing Japanese equities would combine a currency position with equity-market exposure, which is inconsistent with the manager's intention to isolate the currency decision. Selling yen forward would establish the opposite view, benefiting from yen depreciation rather than appreciation. Currency overlay transactions allow the manager to separate currency management from security-selection and asset-allocation decisions.

QUESTION NO: 5

Jack Rose and Ryan Boatman are analysts with Quincy Consultants. Quincy provides advice on risk management and performance presentation to pension plans, insurance firms, and other institutional portfolio managers throughout the United States and Canada.

Rose and Boatman are preparing an analysis of the defined benefit pension plans for four mature corporations in the United States. In an effort to ascertain the risk to the firm's shareholders from the plans. Rose and Boatman gather the information in Figure 1:

Figure 1: Pension Plan Data

	<i>Firm A</i>	<i>Firm B</i>	<i>Firm C</i>	<i>Firm D</i>
Market Value of Plan Assets (\$ million)	\$1,300	\$980	\$1,400	\$710
Market Value of Plan Liabilities (\$ million)	\$1,460	\$900	\$1,330	\$870
Percentage of Plan Assets in Bonds	35%	57%	65%	25%

While discussing how the weighted average cost of capital (WACC) for a corporation can be adjusted to incorporate pension asset risk. Rose and Boatman make the following comments:

- Rose: "From what I understand, in order to calculate a true weighted average cost of capital, management should consider the assets held in their pension plan. Because pension plans hold equity securities as assets, the plan assets usually have a higher weighted average beta than the sponsoring firm's operating assets. This means the typical firm's weighted average asset beta and cost of capital are higher than when calculated using only the operating assets. If management bases their

accept/reject decisions on a weighted average cost of capital that considers only operating assets, they might accept projects that really should have been rejected."

• Boatman: "I'm not sure I agree with you. To match the maturity of their liabilities, pension plans like to hold at least half their assets in long maturity bonds. Then, since the bonds have a long weighted average duration, they have considerable interest rate sensitivity. This is really what makes the pension assets riskier than the firm's operating assets. However, since debt securities have zero betas, they have a low weighted average asset beta and the firm has a lower weighted average cost of capital when pension assets are considered than when they are not considered. The result of considering only the operating assets is that the weighted average cost of capital is inflated and management tends to incorrectly reject projects that could have been accepted." In a visit to the headquarters of Beeman Enterprises, Rose and Boatman explain how in an expanded balance sheet format, a change in a pension plan's asset allocation can result in a change in the firm's financial ratios. To illustrate the concept to the firm's chief financial officer, they provide three different scenarios (shown in Figure 2) indicating necessary changes in the firm's capital structure under the assumption that the firm's pension plan increases its allocation to equity and management wants to keep the sponsoring firm's cost of equity capital constant (i.e., constant equity beta).

Figure 2: Cost of Capital Scenarios

	<i>Debt to Equity Ratio</i>	<i>Total Assets Beta</i>	<i>Equity Beta</i>	<i>Amount of Equity Capital</i>
Scenario A	Increase	Constant	Constant	Increase
Scenario B	Decrease	Increase	Constant	Increase
Scenario C	Increase	Decrease	Constant	Constant

Quincy Consultants has also provided advice to Monroe Portfolio Managers. Among its investments, Monroe has a real estate portfolio that invests in shopping centers and office buildings throughout the southern United States. The firm has provided the following data to calculate and report quarterly returns to current and prospective investors. Additionally, the capital contribution came on day 47 (0.52 into the quarter) and the capital disbursement came on day 67 (0.74 into the quarter).

Total Capital as of	1/1/2007	\$ 18,000,000
Capital Contribution on	2/16/2007	2,300,000
Capital Disbursement on	3/8/2007	850,000
Capital Expenditure		1,000,000
Property taxes paid		219,000
Property sales		1,820,000
Total non-recoverable expenses		178,000
Interest paid on borrowed funds		152,000
Accrued investment income		58,000
Market value — beg. of quarter	1/1/2007	19,100,000
Market value — end of quarter	3/31/2007	20,200,000

After calculating the capital return and income return for the portfolio, Rose and Boatman discuss the performance presentation standards for real estate and private equity portfolios. Discussing the differences between the general provisions of the GIPS standards and those for real estate and private equity portfolios, Rose states the following:

1. "The general provisions require that valuations take place monthly until 2010. For real estate, valuations could be done annually until 2008, but starting in 2008 quarterly valuations are required. For private equity, valuations should be performed annually."
2. "The performance standards in the general provisions for real estate and for private equity require that both gross-of-fees and net-of-fees returns are presented."

Also commenting on the differences between the various GIPS requirements, Boatman states the following:

1. "Although the general provisions for GIPS make the verification of GIPS compliance by an outside third party voluntary, the valuation of real estate and private equity by an outside third party is required by GIPS."
2. "The GIPS general provisions for real estate and for private equity require that both income and capital gains are included in the calculation and presentation of returns."

Determine whether Boatman's two comments on the GIPS standards are correct or incorrect.

- A. Only comment 1 is correct.
- B. Only comment 2 is correct.
- C. Both are correct.
- D. Neither comment is correct.

ANSWER: D

Explanation:

Neither comment is correct. GIPS verification of a firm's claim of compliance is voluntary, but this does not create a blanket requirement for independent third-party valuation of both real estate and private equity. Under the provisions applicable to the question, real estate required periodic valuation by an independent, appropriately qualified professional, whereas private-equity valuation could be performed by knowledgeable and experienced personnel under appropriate senior-management oversight. Accordingly, the assertion that an outside third party must value both asset classes is not supportable.

The statement concerning return presentation is also too broad. GIPS requires returns to reflect the economic components of performance, including income and capital appreciation or depreciation as applicable. However, requirements to *present* separate income and capital-gain figures differ by asset class. Real-estate provisions require presentation of income return and capital return, which reconcile to total return. Private-equity reporting instead emphasizes since-inception performance and cash-flow-based measures, including paid-in capital, distributions, residual value, and prescribed multiples; it does not require separate presentation of an income return. Therefore, the only valid conclusion is that neither of Boatman's comments is correct. See the CFA Institute's [GIPS standards overview](#) and the [GIPS Standards for Firms](#).

QUESTION NO: 6

Garrison Investments is a money management firm focusing on endowment management for small colleges and universities. Over the past 20 years, the firm has primarily invested in U.S. securities with small allocations to high quality long-term foreign government bonds. Garrison's largest account, Point University, has a market value of \$800 million and an asset allocation as detailed in Figure 1.

Figure 1: Point University Asset Allocation

<i>Asset Class</i>	<i>Allocation</i>	<i>Dividend/Coupon*</i>	<i>Beta</i>
Large cap equities	40%	2.0%	1.0
Mid cap equities	25%	1.2%	1.3
Small cap equities	15%	0.9%	1.5
U.S. Bonds	10%	5.0%	0
U.K. Bonds	5%	4.7%	0
German Bonds	5%	4.0%	0
European Index	0%	1.8%	1.2

*Bond coupon payments are all semiannual.

Managers at Garrison are concerned that expectations for a strengthening U.S. dollar relative to the British pound could negatively impact returns to Point University's U.K. bond allocation.

Therefore, managers have collected information on swap and exchange rates. Currently, the swap rates in the United States and the United Kingdom are 4.9% and 5.3%, respectively. The spot exchange rate is 0.45 GBP/USD. The U.K. bonds are currently trading at face value.

Garrison recently convinced the board of trustees at Point University that the endowment should allocate a portion of the portfolio into international equities, specifically European equities. The board has agreed to the plan but wants the allocation to international equities to be a short-term tactical move. Managers at Garrison have put together the following proposal for the reallocation: To minimize trading costs while gaining exposure to international equities, the portfolio can use futures contracts on the domestic 12-month mid-cap equity index and on the 12-month European equity index. This strategy will temporarily exchange \$80 million of U.S. mid-cap exposure for European equity index exposure. Relevant data on the futures contracts are provided in Figure 2.

Figure 2: Mid-cap index and European Index Futures Data

<i>Futures Contract</i>	<i>Price</i>	<i>Beta</i>	<i>Multiplier</i>
Mid-cap Index	\$908	1.10	250
European Index	\$2,351	1.05	50

Three months after proposing the international diversification plan, Garrison was able to persuade Point University to make a direct short-term investment of \$2 million in Haikuza Incorporated (HI), a Japanese electronics firm. HI exports its products primarily to the United States and Europe, selling only 30% of its production in Japan. In order to control the costs of its production inputs, HI uses currency futures to mitigate exchange rate fluctuations associated with contractual gold purchases from Australia. In its current contract, HI has one remaining purchase of Australian gold that will occur in nine months. The company has hedged the purchase with a long 12-month futures contract on the Australian dollar (AUD).

Managers at Garrison are expecting to sell the HI position in one year, but have become nervous about the impact of an expected depreciation in the value of the Yen relative to the U.S. dollar. Thus, they have decided to use a currency futures hedge. Analysts at Garrison have estimated that the covariance between the local currency returns on HI and changes in the USD/Yen spot rate is -0.184 and that the variance of changes in the USD/Yen spot rate is 0.92.

Which of the following is closest to the notional principal on a swap that would allow Point University to hedge the currency risk of the interest payments from their U.K. bond holdings?

- A. GBP 16,000,000.
- B. USD 38,000,000.
- C. GBP 18,000,000.

ANSWER: A

Explanation:

GBP 16,000,000. is the closest notional principal because the hedge is designed to replace the pound-denominated coupon cash flows from the U.K. bonds with dollar cash flows. Point University's U.K. bond allocation is 5% of the USD 800 million portfolio, or USD 40 million. At the spot rate of 0.45 GBP/USD, and because the bonds trade at face value, the bond principal is GBP 18 million.

The bonds pay a 4.7% annual coupon semiannually, so each coupon is $\text{GBP } 18,000,000 \times (4.7\% \div 2) = \text{GBP } 423,000$. In the currency swap, Point University should pay the GBP semiannual fixed leg and receive the USD fixed leg, thereby offsetting the pound coupon it receives from the bonds. The U.K. swap fixed rate is 5.3% annually, paid semiannually; consequently, the GBP payment per period equals the GBP notional $\times (5.3\% \div 2)$. Setting that payment equal to GBP 423,000 gives a GBP notional of approximately GBP 15.96 million, which rounds to GBP 16 million.

This matching of payment dates, currency, and periodic cash-flow amount is the core principle of a currency-swap hedge. See the [CFA Institute currency management refresher reading](#) and the [currency swap overview](#).

QUESTION NO: 7

Cynthia Farmington, CFA, manages the Lewis family's \$600 million securities portfolio. Farmington and the Lewis family have agreed that they should hire a manager of alternative investments to manage a portion of the portfolio containing those assets. As part of the hiring process, they attempted to do the necessary due diligence. They assessed each manager's organization, the relative efficiency of the markets each manager has invested in, the character of each manager, and the service providers, such as lawyers, that each manager has used. In particular, they hoped to find a manager who has run an operation with low employee turnover, has invested in efficient and transparent markets, has sound character, and has utilized reputable providers of external services.

Eventually, Farmington hires the firm owned and managed by Bruce Carnegie, CFA, to diversify the Lewis portfolio into alternative investments. Carnegie will manage the portion of the portfolio containing these assets, and Farmington will continue to manage the remainder of the portfolio in a mix of approximately 50/50 high-grade stocks and bonds. Over the

past ten years, the stock portion of the portfolio has closely tracked the S&P 500 and the bond portfolio has closely tracked a broad bond index.

Carnegie and Farmington meet to discuss how Carnegie should proceed. Farmington mentions that she and the Lewis family have agreed that the main goal of the alternative investments that Carnegie will manage should be to enhance the return of the overall portfolio. Diversification is only a secondary goal. In particular, Farmington says the Lewis family has expressed an interest in having the portfolio take positions in private equity. Farmington says that she envisions that Carnegie should take five positions of about 55 million each in distinct private equity investments, and each position should have about a 5-year horizon.

Farmington states that she has grown very dependent on benchmarks for her investing activities, and has concerns with respect to how she and Carnegie will monitor the success of the portfolio allocation in private equity. She has read that there can be a problem with the valuation of private equity indices in that they depend on price-revealing events like IPOs, mergers, and new financing. Thus, the repricing of the index occurs infrequently. Carnegie concludes that the solution is to follow the commonly accepted practice of creating their own private equity benchmark.

Farmington asks Carnegie to explain the choices that exist in the private equity market. Carnegie explains that there are two basic categories: venture capital funds and buyout funds. Farmington asks that Carnegie explain the pros and cons of one over the other. Carnegie states that buyout funds would probably have higher return potential, fewer losses, earlier cash flows, and less error in the measurement of the returns.

Carnegie comments that before he proceeds he will need to communicate with the clients. Farmington says this communication is not necessary because the Lewis family has largely followed her advice with very few questions. Even when the market has fallen and the portfolio has not done well, the Lewis family has not asked for any changes.

With respect to the pros and cons Carnegie listed concerning buyout funds over venture capital funds, Carnegie was correct in all of the points except that buyout funds tend to have:

- A. higher return potential.
- B. earlier cash flows.
- C. less error in the measurement of the returns.

ANSWER: A

Explanation:

higher return potential. is the exception because buyout funds generally do not have greater upside potential than venture capital funds. Buyout strategies typically acquire mature, established companies with existing operations, revenues, and more observable business fundamentals. Their returns can benefit from operational improvements, leverage, and a later sale or public offering, but the relative maturity of their portfolio companies generally limits the extreme upside that can arise from a successful early-stage venture investment.

Venture capital funds invest in younger businesses whose commercial prospects are less established. A large proportion of investments may fail or produce limited returns, but a small number of highly successful companies can generate exceptionally large gains. This more dispersed outcome pattern gives venture capital its comparatively greater return potential, while also creating greater loss frequency and valuation uncertainty. In contrast, the later-stage nature of buyout investments commonly supports earlier distributions and more readily measured values than venture investments, although private-market valuation remains inherently appraisal-based between observable transactions.

This distinction reflects the risk-and-return characteristics of private equity strategies described by the [CFA Institute's private-equity research](#) and the private-markets framework outlined by the [Institutional Limited Partners Association](#).

QUESTION NO: 8

Gabrielle Reneau, CFA, and Jack Belanger specialize in options strategies at the brokerage firm of Damon and Damon. They employ fairly sophisticated strategies to construct positions with limited risk, to profit from future volatility estimates, and to exploit arbitrage opportunities. Damon and Damon also provide advice to outside portfolio managers on the appropriate use of options strategies. Damon and Damon prefer to use, and recommend, options written on widely traded indices such as the S&P 500 due to their higher liquidity. However, they also use options written on individual stocks when the investor has a position in the underlying stock or when mispricing and/or trading depth exists.

In order to trade in the one-year maturity puts and calls for the S&P 500 stock index, Reneau and Belanger contact the chief economists at Damon and Damon, Mark Blair and Fran Robinson. Blair recently joined Damon and Damon after a successful stint at a London investment bank. Robinson has been with Damon and Damon for the past ten years and has a considerable record of success in forecasting macroeconomic activity. In his forecasts for the U.S. economy over the next year, Blair is quite bullish, for both the U.S. economy and the S&P 500 stock index. Blair believes that the U.S. economy will grow at 2% more than expected over the next year. He also states that labor productivity will be higher than expected, given increased productivity through the use of technological advances. He expects that these technological advances will result in higher earnings for U.S. firms over the next year and over the long run.

Reneau believes that the best S&P 500 option strategy to exploit Blair's forecast involves two options of the same maturity, one with a low exercise price, and the other with a high exercise price. The beginning stock price is usually below the two option strike prices. She states that the benefit of this strategy is that the maximum loss is limited to the difference between the two option prices.

Belanger is unsure that Blair's forecast is correct. He states that his own reading of the economy is for a continued holding pattern of low growth, with a similar projection for the stock market as a whole. He states that Damon and Damon may want to pursue an options strategy where a put and call of the same maturity and same exercise price are purchased. He asserts that such a strategy would have losses limited to the total cost of the two options.

Reneau and Belanger are also currently examining various positions in the options of Brendan Industries. Brendan Industries is a large-cap manufacturing firm with headquarters in the midwestern United States. The firm has both puts and calls sold on the Chicago Board Options Exchange. Their options have good liquidity for the near money puts and calls and for those puts and calls with maturities less than four months. Reneau believes that Brendan Industries will benefit from the economic expansion forecasted by Mark Blair, the Damon and Damon economist. She decides that the best option strategy to exploit these expectations is for her to pursue the same strategy she has delineated for the market as a whole.

Shares of Brendan Industries are currently trading at \$38. The following are the prices for their exchange-traded options.

<i>Option Type</i>	<i>Strike Price</i>	<i>Maturity</i>	<i>Price</i>
Call	\$35	30 days	\$4.50
Call	\$40	30 days	\$1.50
Put	\$35	30 days	\$1.80
Put	\$40	30 days	\$3.50

As a mature firm in a mature industry, Brendan Industries stock has historically had low volatility.

However, Belanger's analysis indicates that with a lawsuit pending against Brendan Industries, the volatility of the stock price over the next 60 days is greater by several orders of magnitude than the implied volatility of the options. He believes that Damon and Damon should attempt to exploit this projected increase in Brendan Industries' volatility by using an options strategy where a put and call of the same maturity and same exercise price are utilized. He advocates using the least expensive strategy possible.

During their discussions, Reneau cites a counter example to Brendan Industries from last year. She recalls that Nano Networks, a technology firm, had a stock price that stayed fairly stable despite expectations to the contrary. In this case, she utilized an options strategy where three different calls were used. Profits were earned on the strategy because Nano Networks' stock price stayed fairly stable. Even if the stock price had become volatile, losses would have been limited. Later that week, Reneau and Belanger discuss various credit option strategies during a lunch time presentation to Damon and Damon client portfolio managers. During their discussion, Reneau describes a credit option strategy that pays the holder a fixed sum, which is agreed upon when the option is written, and occurs in the event that an issue or issuer goes into default. Reneau declares that this strategy can take the form of either puts or calls. Belanger states that this strategy is known as either a credit spread call option strategy or a credit spread put option strategy.

Reneau and Belanger continue by discussing the benefits of using credit options. Reneau mentions that credit options written on an underlying asset will protect against declines in asset valuation. Belanger says that credit spread options protect against adverse movements of the credit spread over a referenced benchmark.

Regarding their comments concerning the benefits of using credit options, are Reneau and Belanger correct or incorrect?

A. Only Belanger is correct.

B. Only Reneau is correct.

C. Both are correct.

ANSWER: C

Explanation:

Both are correct. A credit option written on an underlying asset is designed to provide protection against deterioration in that asset's credit quality and the associated decline in its value. Its payoff is tied to a defined credit event, such as default, and can therefore offset losses suffered by an investor holding the referenced bond, loan, or other credit-sensitive asset. This is the protection Reneau describes: the derivative addresses the loss in asset value that may arise from adverse credit developments.

A credit spread option instead references the spread between the yield on a risky debt instrument and a benchmark yield curve or benchmark security, commonly a government security curve. Because credit spreads generally widen when perceived credit risk rises, a properly selected credit spread option can hedge an unfavorable change in that spread. Thus, it provides protection against the adverse spread movement identified by Belanger, rather than directly against a specified default event alone. These applications are consistent with the CFA Program's derivatives coverage of credit derivatives and their hedging uses; see the [CFA Program Curriculum](#) and the ISDA overview of [credit derivatives market concepts](#).

QUESTION NO: 9

Cindy Hatcher, CFA, has spent the last ten years as a portfolio manager with Bernhardt Capital. While working for Bernhardt, Hatcher was responsible for maintaining and improving the company's code of ethics and guidelines for ethical money management. As a result of Hatcher's efforts, Bernhardt saw a dramatic decline in the number of complaints received from their individual and institutional customers.

One of Bernhardt's direct competitors, Smith Investments, is keenly aware of Hatcher's reputation for ethical business practices and has offered her a job as their compliance officer. Hatcher has been apprised of several potential ethical problems at Smith that she will be directly responsible for fixing through implementation of policies and procedures that will prevent ethical dilemmas. The management at Smith is willing to grant Hatcher the authority to construct and implement policies to eliminate the ethical problems at the company.

Hatcher agrees to accept the position with Smith and resigns from employment with Bernhardt. As her first initiative with the company, Hatcher distributes to all employees at Smith a survey intended to acquaint her with the company's common business practices. Her goal is to identify those factors that are most likely to interfere with Smith's compliance with the CFA Institute's Code of Ethics and Standards of Practice. After collecting and analyzing the anonymous responses to the survey, Hatcher has identified the following four issues as the most frequently cited questionable business practices:

1. Many Smith employees have relatives who are clients of the firm. For relatives' accounts where the Smith employee does not have beneficial ownership, trades are generally executed in conjunction with trades for other discretionary accounts held at the firm. Only in accounts where the Smith employee has beneficial ownership are trades delayed until all discretionary account trading is completed.
2. Many of Smith's employees either personally own or maintain, through a family member, beneficial ownership of stocks that are also held in accounts for many of the firm's clients. While the company maintains a strict disclosure policy to the firm of such beneficial ownership and an "at will" disclosure policy to its clients, employees are not barred from trading these securities for their personal benefit even if their clients also own or have a direct or indirect financial interest in the same securities.
3. Account managers meet weekly to discuss the issues and concerns of the client portfolios managed at the firm. During the meetings it is not unusual for individual clients to be identified and discussed. Information regarding the client's holdings and investment strategy is discussed as well as personal needs related to the client's portfolio. The meetings are held in order to provide guidance and continuing education to all of the firm's account managers.
4. At the suggestion of fixed-income analysts at the firm, most of the portfolio managers working for Smith have been adding B-rated corporate fixed-income securities to their portfolios. Analysts originally made (and continue to make) the suggestion due to the attractive yield potential offered by this class of investments. Smith's portfolio managers were thrilled with the idea since the returns on many of the portfolios' equity positions have been stifled by high profile accounting scandals.

Management at Smith Investments has been pleased with Hatcher's efforts so far but is concerned about the firm's ability to maintain compliance with the CFA Institute's Global

Investment Performance Standards (GIPS®). The managing director of the firm, Erich Prince, has made the following comments to Hatcher:

"I am concerned that we will not be able to claim compliance with GIPS at the end of the year since our new information system has inhibited our ability to include terminated portfolios in the historical record up to the last full measurement period before they were terminated. Also, we are unable to regroup portfolios that utilize hedging into separate composites from those that do not utilize hedging. These portfolios are currently grouped according to traditional value and growth strategies based on the capitalization of portfolio holdings (i.e., large vs. small)."

Hatcher eases Prince's mind by telling him she will "ensure full compliance with GIPS by the end of the quarter."

Evaluate Martin Prince's comments about Smith's ability to maintain compliance with the Global Investment Performance Standards (GIPS). Are Prince's statements regarding terminated portfolios and hedging strategies correct or incorrect?

- A. Only Prince's statement on terminated portfolios is correct.
- B. Only Prince's statement regarding hedging strategies is correct.
- C. Both of Prince's statements are correct and in full compliance with GIPS.

ANSWER: A

Explanation:

Only Prince's statement on terminated portfolios is correct. GIPS requires a firm to include a terminated portfolio in the historical composite record through the last full performance measurement period during which the portfolio was managed. This requirement prevents survivorship bias: excluding terminated accounts can make a composite's historical performance appear stronger than the experience of all portfolios actually managed under the relevant strategy. Therefore, if Smith's information system cannot retain and include those terminated portfolios through the required final full period, Smith cannot make a claim of GIPS compliance until that deficiency is corrected. GIPS compliance is a firmwide claim that depends on satisfying all applicable requirements; it is not available on a partial-compliance basis. By contrast, separating portfolios based specifically on whether hedging is used is a recommended consideration for producing meaningful composites, rather than an unconditional requirement in the facts given. Smith's use of strategy-based groupings can remain consistent with the composite-construction framework, provided the portfolios grouped together share the applicable investment mandate, objective, or strategy. See the [GIPS Standards for Firms](#) and CFA Institute's [GIPS standards resources](#).

QUESTION NO: 10

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securities for their personal benefit even if their clients also own or have a direct or indirect financial interest in the same securities.

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Hatcher eases Prince's mind by telling him she will "ensure full compliance with GIPS by the end of the quarter."

Hatcher is concerned about Smith's policies related to disclosure of beneficial ownership of securities. Determine if Smith's disclosure policies are in violation of the CFA Institute Code and Standards and suggest a strategy to eliminate the violation if one exists.

- A. The policy violates the Code and Standards and can be fixed by barring employees from trading the conflicting securities.
- B. The policy violates the Code and Standards and can be fixed by requiring written disclosure to clients regarding Smith employees with beneficial ownership of conflicting securities.
- C. This particular policy does not violate the Code and Standards.

ANSWER: B

Explanation:

The policy violates the Code and Standards and can be fixed by requiring written disclosure to clients regarding Smith employees with beneficial ownership of conflicting securities. CFA Institute Standard VI(A), Disclosure of Conflicts, requires members and candidates to make full and fair disclosure of matters that reasonably could be expected to impair their independence and objectivity or interfere with their duties to clients. Beneficial ownership by an employee, including ownership held through family members where the employee has a beneficial interest, can create such a conflict when the employee recommends, trades, or otherwise acts with respect to the same security for client accounts.

Smith's internal disclosure requirement is helpful but does not satisfy the separate duty to disclose material conflicts to clients and prospective clients. An optional, "at will" client-disclosure practice is inadequate because disclosure must be made when the conflict exists and in a form clients can understand before they can evaluate its significance. Written disclosure provides a clear, durable record and allows clients to assess the employee's potential competing interest in connection with investment actions. The Standards permit properly managed personal investing; they principally require transparent disclosure of the conflict rather than a blanket prohibition on employee ownership or trading. See CFA Institute's [Code of Ethics and Standards of Professional Conduct](#) and its [Standards of Practice Guidance](#).

QUESTION NO: 11

Pace Insurance is a large, multi-line insurance company that also owns several proprietary mutual funds. The funds are managed individually, but Pace has an investment committee that oversees all of the funds. This committee is responsible for evaluating the performance of the funds relative to appropriate benchmarks and relative to the stated investment objectives of each individual fund. During a recent investment committee meeting, the poor performance of Pace's equity

mutual funds was discussed. In particular, the inability of the portfolio managers to outperform their benchmarks was highlighted. The net conclusion of the committee was to review the performance of the manager responsible for each fund and dismiss those managers whose performance had lagged substantially behind the appropriate benchmark.

The fund with the worst relative performance is the Pace Mid-Cap Fund, which invests in stocks with a capitalization between \$40 billion and \$80 billion. A review of the operations of the fund found the following:

- The turnover of the fund was almost double that of other similar style mutual funds.
- The fund's portfolio manager solicited input from her entire staff prior to making any decision to sell an existing holding.
- The beta of the Pace Mid-Cap Fund's portfolio was 60% higher than the beta of other similar style mutual funds.
- No stock is considered for purchase in the Mid-Cap Fund unless the portfolio manager has 15 years of financial information on that company, plus independent research reports from at least three different analysts.
- The portfolio manager refuses to increase her technology sector weighting because of past losses the fund incurred in the sector.
- The portfolio manager sold all the fund's energy stocks as the price per barrel of oil rose above \$80. She expects oil prices to fall back to the \$40 to \$50 per barrel range.

A committee member made the following two comments:

Comment 1: "One reason for the poor recent performance of the Mid-Cap Mutual Fund is that the portfolio lacks recognizable companies. I believe that good companies make good investments." Comment 2: "The portfolio manager of the Mid-Cap Mutual Fund refuses to acknowledge her mistakes. She seems to sell stocks that appreciate, but hold stocks that have declined in value."

The supervisor of the Mid-Cap Mutual Fund portfolio manager made the following statements: Statement 1: "The portfolio manager of the Mid-Cap Mutual Fund has engaged in quarter-end window dressing to make her portfolio look better to investors. The portfolio manager's action is a behavioral trait known as over-reaction."

Statement 2: "Each time the portfolio manager of the Mid-Cap Mutual fund trades a stock, she executes the trade by buying or selling one-third of the position at a time, with the trades spread over three months. The portfolio manager's action is a behavioral trait known as anchoring."

The committee member's Comment 1 could be best described as example of:

- A. menial accounting.
- B. representativeness.
- C. hindsight bias.

ANSWER: B

Explanation:

"representativeness." is correct because the committee member infers that a company's recognizable or otherwise "good" qualities necessarily imply that its stock will be a good investment. This is the defining shortcut behind representativeness: an investor classifies an investment using a salient stereotype and then extrapolates that classification into an expectation about future return. Here, "good company" is treated as representative of "good investment," without considering whether the company's favorable qualities are already incorporated into its market price, whether its valuation is attractive, or whether its characteristics fit the fund's benchmark and mandate.

In investment analysis, a sound business and an attractive security are separate judgments. A high-quality, familiar company can still provide disappointing returns if investors have already priced in optimistic expectations. Conversely, a less familiar company may be attractive when its fundamentals and valuation support a favorable risk-return outlook. The comment therefore reflects a behavioral tendency to rely on a simplified association rather than a complete assessment of expected cash flows, required return, valuation, and risk. CFA Institute identifies representativeness as a cognitive error relevant to investment decision-making; see its [Behavioral Finance refresher reading](#). For an accessible discussion of how behavioral biases affect investor decisions, see the [CFA Institute Research Foundation overview](#).

QUESTION NO: 12

Security analysts Andrew Tian, CFA, and Cameron Wong, CFA, are attending an investment symposium at the Singapore Investment Analyst Society. The focus of the symposium is capital market expectations and relative asset valuations across markets. Many highly-respected practitioners and academics from across the Asia-Pacific region are on hand to make presentations and participate in panel discussions.

Characteristics for Russia and Brazil

<i>Characteristic</i>	<i>Brazil</i>	<i>Russia</i>
Foreign exchange to short-term debt	93%	182%
Debt as a percentage of GDP	86%	38%

<i>Index</i>	<i>Value</i>	<i>D₀</i>	<i>$\hat{g}$</i>	<i>Risk-free</i>	<i>Expected risk premium</i>
Singapore	3,750	90	6.0%	2.4%	?
Taiwan	?	450	4.5%	2.7%	1.10 × Singapore's E(Risk prem.)

The next speaker, Clive Smyth, is a member of the exchange rate committee at the Bank of New Zealand. His presentation concerns the links between spot currency rates and forecasted exchange rates. He states that foreign exchange rates are linked by several forces including purchasing power parity (PPP) and interest rate parity (IRP). He tells his audience that the relationship between exchange rates and PPP is strongest in the short run, while the relationship between exchange rates and IRP is strongest in the long run. Smyth goes on to say that when a country's economy becomes more integrated with the larger world economy, this can have a profound impact on the cost of capital and asset valuations in that country.

The final speaker in the session directed his discussion toward emerging market investments.

This discussion, by Hector Ruiz, head of emerging market investment for the Chilean Investment Board, was primarily concerned with how emerging market risk differs from that in developed markets and how to evaluate the potential of emerging market investments. He noted that sometimes an economic crisis in one country can spread to other countries in the area, and that asset returns often exhibit a greater degree of non-normality than in developed markets. Ruiz concluded his presentation with the data in the tables below to illustrate factors that should be considered during the decision-making process for portfolio managers who are evaluating investments in emerging markets.

With regard to Ruiz's statements concerning emerging market risk, when an economic crisis spreads from one country to other countries in the area, this is known as:

- A. contagion, and non-normality of returns precludes the use of non-parametric models to estimate risk.
- B. contagion, and non-normality of returns makes it more difficult to estimate risk using parametric models.
- C. macro transmission, and non-normality of returns makes it more difficult to estimate risk using parametric models.

ANSWER: B

Explanation:

"contagion, and non-normality of returns makes it more difficult to estimate risk using parametric models." is correct. Financial contagion is the transmission or spread of financial stress, market disruption, or crisis effects from one country to others. It is particularly relevant in emerging markets because countries in a region may share trade relationships, funding sources, investor bases, exchange-rate pressures, or perceived economic vulnerabilities. A crisis can therefore prompt investors to reassess risks across multiple markets rather than only within the initially affected country. The IMF discusses

this cross-border transmission of financial stress in its work on systemic risk and spillovers: [IMF: Financial Contagion in the Global Financial Crisis](#).

The statement regarding non-normal returns is also important for risk estimation. Parametric risk models typically rely on assumptions about a return distribution, often summarized by parameters such as mean, variance, and correlations and commonly modeled as normally distributed. Emerging-market returns can exhibit skewness, fat tails, discontinuities, and extreme outcomes more frequently than such assumptions imply. Consequently, estimating tail risk and potential losses with parametric methods becomes more difficult and requires careful model selection and validation. The CFA Institute's overview of risk management provides relevant context on measuring and managing investment risk: [CFA Institute: Risk Management for Investment Management](#).

QUESTION NO: 13

Jacques Lepage, CFA, is a portfolio manager for MontBlanc Securities and holds 4 million shares of AirCon in client portfolios. Lepage issues periodic research reports on AirCon to both discretionary and nondiscretionary accounts. In his October investment report, Lepage stated, "In my opinion, AirCon is entering a phase, which could put it 'in play' as a takeover target. Nonetheless, this possibility appears to be fully reflected in the market value of the stock." One month has passed since Lepage's October report and AirCon has just announced the firm's executive compensation packages, which include stock options (50% of which expire in one year), personal use of corporate aircraft (which can be used in conjunction with paid vacation days), and a modest base salary that constitutes a small proportion of the overall package. While he has not asked, he believes that the directors of MontBlanc will find the compensation excessive and sells the entire position immediately after the news. Unbeknownst to Lepage, three days earlier an announcement was made via Reuters and other financial news services that AirCon had produced record results that were far beyond expectations. Moreover, the firm has established a dominant position in a promising new market that is expected to generate above-average firm growth for the next five years.

A few weeks after selling the AirCon holdings, Lepage bought 2.5 million shares of Spectra Vision over a period of four days. The typical trading volume of this security is about 1.3 million shares per day, and his purchases drove the price up 9% over the 4-day period. These trades were designated as appropriate for 13 accounts of differing sizes, including performance-based accounts, charitable trusts, and private accounts. The shares were allocated to the accounts on a pro rata basis at the end of each day at the average price for the day.

One of the investment criteria used in evaluating equity holdings is the corporate governance structure of the issuing company. Because Lepage has dealt with this topic extensively, he has been asked to present a talk of corporate governance issues to the firm's portfolio managers and analysts at the next monthly meeting. At the meeting, Lepage makes the following comments: "When evaluating the corporate governance policies of a company, you should begin by assessing the responsibilities of the company's board of directors. In general, the board should have the responsibility to set long-term objectives that are consistent with shareholders' interests. In addition, the board must be responsible for hiring the CEO and setting his or her compensation package such that the CEO's interests are aligned with those of the shareholders. In that way the board can spend its time on matters other than monitoring the CEO. A firm with good corporate governance policies should also have an audit committee made up of independent board members that are experienced in auditing and related legal matters. The audit committee should have full access to the firm's financial statements and the ability to question auditors hired by the committee."

Determine whether Lepage's statements in his presentation to MontBlanc's portfolio managers and analysts regarding the responsibilities of the board of directors and the audit committee are correct or incorrect.

- A. Only the statement regarding the board is correct.
- B. Only the statement regarding the audit committee is correct.
- C. Both statements are correct or both statements are incorrect.

ANSWER: B

Explanation:

Only the statement regarding the audit committee is correct. Effective corporate governance calls for an audit committee that is independent of management and able to exercise meaningful oversight of the financial-reporting process. Its responsibilities ordinarily include reviewing financial statements and related disclosures, overseeing the external auditor's appointment and independence, and communicating directly with the auditors. Independence and sufficient financial or audit expertise enable the committee to challenge management and auditors appropriately, rather than merely accepting reported

information. Lepage's description of an independent committee with access to financial statements and authority to question auditors is therefore consistent with sound governance practice.

The board's core role also includes ongoing oversight of management and the chief executive officer. Although establishing long-term objectives and designing compensation to align executive and shareholder interests are important board functions, compensation alignment does not replace monitoring management's performance, conduct, risk taking, and execution of strategy. Governance principles emphasize that directors retain accountability for supervising senior management on an ongoing basis. The audit-committee description is thus the correct statement for purposes of this question. See the [G20/OECD Principles of Corporate Governance](#) and the [SEC audit committee requirements](#).

QUESTION NO: 14

John Rawlins is a bond portfolio manager for Waimea Management, a U.S.-based portfolio management firm. Waimea specializes in the management of equity and fixed income portfolios for large institutional investors such as pension funds, insurance companies, and endowments. Rawlins uses bond futures contracts for both hedging and speculative positions. He frequently uses futures contracts for tactical asset allocation because, relative to cash instruments, futures have lower transactions costs and margin requirements. They also allow for short positions and longer duration positions not available with cash market instruments. Rawlins has a total of approximately \$750 million of assets under management.

In one of his client portfolios, Rawlins currently holds the following positions:

<i>Bond</i>	<i>Face Amount</i>	<i>Price</i>	<i>Duration Today</i>	<i>Duration in 1 Year</i>
Q	\$10m	104.98	10.32	9.46
R	\$25m	98.36	8.67	7.83
S	\$15m	101.21	7.38	6.51

The dollar duration of the cheapest to deliver bond (CTD) is \$10,596.40 and the conversion factor is 1.3698.

In a discussion of this bond hedge, Rawlins confers with John Tejada, his assistant. Tejada states that he has regressed the corporate bond's yield against the yield for the CTD and has found that the slope coefficient for this regression is 1.0. He states his results confirm the assumptions made by Rawlins for his hedging calculations. Rawlins states that had Tejada found a slope coefficient greater than one, the number of futures contracts needed to hedge a position would decrease (relative to the regression coefficient being equal to one).

In addition to hedging specific bond positions, Rawlins tends to be quite active in individual bond management by moving in and out of specific issues to take advantage of temporary mispricing. Although the turnover in his portfolio is sometimes quite high, he believes that by using his gut instincts he can outperform a buy-and-hold strategy. Tejada on the other hand prefers using statistical software and simulation to help him find undervalued bond issues. Although Tejada has recently graduated from a prestigious university with a master's degree in finance, Rawlins has not given Tejada full rein in decision-making because he believes that Tejada's approach needs further evaluation over a period of both falling and rising interest rates, as well as in different credit environments.

Rawlins and Tejada are evaluating two individual bonds for purchase. The first bond was issued by Dynacom, a U.S. telecommunications firm. This bond is denominated in dollars. The second bond was issued by Bergamo Metals, an Italian based mining and metal fabrication firm. The Bergamo bond is denominated in euros. The holding period for either bond is three months. The characteristics of the bonds are as follows:

	<i>Yield on Annual Basis</i>	<i>Modified Duration</i>	<i>Maturity</i>	<i>Current Price</i>	<i>Semiannual Coupon Payment</i>
Dynacom Bond	5.00%	5.13	6.0	100	\$2.50
Bergamo Bond	9.00%	2.62	3.0	100	\$4.50

3-month cash interest rates are 1% in the United States and 2.5% in the European Union. Rawlins and Tejada will hedge the receipt of euro interest and principal from the Bergamo bond using a forward contract on euros.

Rawlins evaluates these two bonds and decides that over the next three months, he will invest in the Dynacom bond. He notes that although the Bergamo bond has a yield advantage of 1% over the next quarter, the euro is at a three month forward discount of approximately 1.5%. Therefore, he favors the Dynacom bond because the net return advantage for the Dynacom bond is 0.5% over the next three months.

Tejada does his own analysis and states that, although he agrees with Rawlins that the Dynacom bond has a yield advantage, he is concerned about the credit quality of the Dynacom bond. Specifically, he has heard rumors that the chief executive and the chairman of the board at Dynacom are both being investigated by the U.S. Securities and Exchange Commission for possible manipulation of Dynacom's stock price, just prior to the exercise of their options in the firm's stock. He believes that the resulting fallout from this alleged incident could be damaging to Dynacom's bond price.

Tejada analyzes the potential impact on Dynacom's bond price using breakeven analysis. He believes that news of the incident could increase the yield on Dynacom's bond by 0.75%. Under this scenario, he states that he would favor the Bergamo bond over the next three months, assuming that the yield on the Bergamo bond stays constant. Rawlins reviews Tejada's breakeven analysis and states that though he is appreciative of Tejada's efforts, the analysis relies on an approximation.

Suppose that the original dollar duration for a 100 basis point change in interest rates was \$4,901,106 and that the bond prices remain constant during the year. Based upon the durations one year from today, and assuming a proportionate investment in each of the three bonds, the amount of cash that will need to be invested to restore the average dollar duration to the original level is closest to:

- A. \$5,885,167.
- B. \$10,888,662.
- C. \$12,793,588.

ANSWER: C

Explanation:

\$12,793,588. is correct because restoring the portfolio's original dollar-duration exposure requires scaling the entire three-bond portfolio proportionately. First, calculate dollar duration at the one-year horizon using each bond's updated market value and duration. The resulting portfolio dollar duration is approximately \$3,906,822, compared with the target original dollar duration of \$4,901,106. The required scaling factor is therefore $\$4,901,106 \div \$3,906,822 = 1.2545$.

Because the investment must be proportionate across all three bonds, the additional cash is the incremental scaling factor, 0.2545, times the portfolio's one-year market value. That market value is approximately \$50.27 million, obtained from the updated values of the three holdings. Thus, required new cash is approximately $0.2545 \times \$50.27 \text{ million} = \12.79 million . Buying each bond in its existing proportion increases market value and dollar duration by the same factor, returning the portfolio to its intended interest-rate sensitivity. Dollar duration is the monetary change in portfolio value associated with a stated yield change and is a key measure for managing fixed-income interest-rate exposure. See the CFA Institute's [CFA Program curriculum overview](#) and its [fixed-income refresher readings](#).

QUESTION NO: 15

Travis Smith, CFA, is chief economic strategist and market analyst for Nashville Capital Management. He is developing a forecast of the S&P 500 stock market index utilizing different approaches.

Using microeconomic analysis, Smith wants to value the S&P using a dividend discount model (DDM) valuation approach. The trailing recent 52-week dividend for the S&P 500 equaled \$60. Used as a proxy for the nominal risk-free rate, Treasury rates are as follows:

- 3-month T-bill rate: 3.5%
- 30-year T-bond rate: 5.0%

Smith uses an equity market premium equal to 6%. His estimate for the long-term outlook for ROE is 11%, and the long-run earnings retention rate is estimated at 40%.

Smith also is forecasting the market trends using varied macroeconomic techniques. He believes that security prices reflect expectations about the general economy. During his monitoring and forecasting of the overall economy, Smith is evaluating cyclical indicators and the business cycle.

Smith has focused his analysis on three indicators:

1. Index of industrial production.
2. Interest rate spread between 10-year T-bonds and the fed funds rate.
3. Stock prices.

Smith is particularly interested in using stock market trends to predict economic turning points. In conducting his research, Smith has found that the business cycle appears to be in the slowdown phase. In his capital markets forecasting activities, Smith looks at government policy, and attempts to predict business and consumer activity, along with foreign trade. Smith has determined that government policy has a significant influence on the business cycle, and he is trying to predict changes in government policy. Smith predicts that the government fiscal policy will loosen and that the Federal Reserve monetary policy will tighten. Smith estimates the following variables:

- Short-term neutral interest rate: 3.5%
- Nominal GDP long-term growth rate trend: 4.25%
- Federal Reserve inflation target: 2.25%

Smith forecasts that inflation will increase to 3.0%, and nominal GDP will grow at a 1.5% rate. Smith's supervisor, Rasheed Gupta, requests a valuation of the S&P500 using a free cash flow to equity (FCFE) model. Gupta makes the following statement:

"A valuation model that replaces dividends with free cash flow to equity is a good alternative to the DDM. If I remember correctly, free cash flow to equity equals net income plus depreciation." Using his fiscal and monetary policy forecasts, Smith should forecast that the yield curve will:

- A. flatten.
- B. steepen.
- C. invert.

ANSWER: A

Explanation:

The correct forecast is **flatten**. The yield curve reflects the difference between longer-term and shorter-term interest rates. A tightening monetary-policy stance generally raises short-term policy rates or is expected to do so, placing upward pressure on the short end of the curve. The Federal Reserve explains that its policy actions influence short-term interest rates and financial conditions more broadly; see the [Federal Reserve's overview of monetary policy](#).

At the same time, looser fiscal policy generally increases government borrowing and can support aggregate demand, which tends to place upward pressure on longer-maturity yields. In this combined-policy setting, however, the direct upward pressure from monetary tightening on short rates offsets the steepening influence normally associated with fiscal expansion. Consequently, the gap between long- and short-term yields narrows: the curve flattens. This conclusion is consistent with the standard interpretation of Treasury yield-curve movements, where changes in monetary-policy expectations are an important determinant of shorter-dated Treasury yields. The U.S. Treasury provides current yield-curve-rate information at its [Daily Treasury Par Yield Curve Rates](#) page.

QUESTION NO: 16

Powerful Performance Presenters (PPP) is a performance attribution and evaluation firm for pension consulting firms and has recently been hired by Stober and Robertson to conduct a performance attribution analysis for TopTech. Tom Harrison and Wendy Powell are the principals for PPP. Although performance attribution has come under fire lately because of its shortcomings, Stober believes PPP provides a needed service to its clients. Robertson shares Stober's view of performance attribution analysis.

Stober and Robertson request that Harrison and Powell provide a discussion of performance measures. During a conversation on complements to attribution analysis, Harrison notes the uses of the Treynor ratio. He states that the Treynor ratio is appropriate only when the investor's portfolio is well diversified. Powell states that the Sharpe ratio and the Treynor ratio will typically yield the same performance rankings for a set of portfolios.

Stober requests that PPP do some performance attribution calculations on TopTech's managers.

In order to facilitate the analysis, Stober provides the information in the following table:

Harrison states one of PPP's services is that it will determine if TopTech has chosen a valid benchmark. Stober volunteers that indeed his firm's benchmark possesses the properties of a valid benchmark and describes its composition. The benchmark has the following characteristics:

- It uses the top 10% of U.S. portfolio managers each year in each asset class as the benchmark for TopTech managers;

- TopTech is very careful to make sure that its managers are familiar with the securities in each benchmark asset class;

<i>Composite</i>	<i>Weighting</i>		<i>Return</i>	
	<i>TopTech</i>	<i>Benchmark</i>	<i>TopTech</i>	<i>Benchmark</i>
Small-cap value	50%	60%	18.7%	28.6%
Large-cap value	30%	25%	15.8%	12.4%
Financials	20%	15%	12.5%	8.85%

At the request of Stober, Harrison and Powell explore alternatives to the benchmark TopTech is currently using for its small-cap value manager. After some investigation of the small-cap value manager's emphasis, Harrison and Powell derive four potential custom benchmarks and calculate two measures to evaluate the benchmarks: (1) the return to the manager's active management or $A = \text{portfolio return} - \text{benchmark return}$; and (2) the return to the manager's style or $S = \text{benchmark return} - \text{broad market return}$.

The following characteristics are presented below for each benchmark: (1) the beta between the benchmark and the small-cap value portfolio; (2) the tracking error (i.e., the standard deviation of A); (3) the turnover of the benchmark; and (4) the correlation between A and S .

Harrison and Powell evaluate the benchmarks based on the four measures.

Regarding their statements concerning the Sharpe and the Treynor ratios, are Harrison and Powell correct or incorrect?

- A. Only Harrison is correct.
- B. Only Powell is correct.
- C. Both are incorrect.

ANSWER: A

Explanation:

Only Harrison is correct. The Treynor ratio measures excess return per unit of systematic risk: portfolio return less the risk-free rate, divided by beta. Because beta captures only market-related, nondiversifiable risk, this measure is appropriate

when the portfolio is already well diversified. In that setting, idiosyncratic security risk has largely been eliminated, so beta is the relevant risk measure for assessing whether the manager earned adequate return for the market risk assumed.

The two ratios need not produce the same ranking. The Sharpe ratio divides excess return by total return volatility, measured by standard deviation, whereas the Treynor ratio divides it by beta. Thus, a portfolio with substantial diversifiable risk can have a relatively attractive Treynor ratio because its beta is low, while receiving a weaker Sharpe ratio because its total volatility is high. Conversely, rankings can coincide only under particular conditions, such as when the portfolios have comparable diversification and a consistent relationship between total risk and beta. The distinction reflects the core portfolio-theory separation between total risk and systematic risk; see the CFA Institute's [Portfolio Risk and Return](#) refresher material and the [SEC's investor guidance on investment risk](#).

QUESTION NO: 17

Jacques Lepage, CFA, is a portfolio manager for MontBlanc Securities and holds 4 million shares of AirCon in client portfolios. Lepage issues periodic research reports on AirCon to both discretionary and nondiscretionary accounts. In his October investment report, Lepage stated, "In my opinion, AirCon is entering a phase, which could put it 'in play' as a takeover target. Nonetheless, this possibility appears to be fully reflected in the market value of the stock." One month has passed since Lepage's October report and AirCon has just announced the firm's executive compensation packages, which include stock options (50% of which expire in one year), personal use of corporate aircraft (which can be used in conjunction with paid vacation days), and a modest base salary that constitutes a small proportion of the overall package. While he has not asked, he believes that the directors of MontBlanc will find the compensation excessive and sells the entire position immediately after the news. Unbeknownst to Lepage, three days earlier an announcement was made via Reuters and other financial news services that AirCon had produced record results that were far beyond expectations. Moreover, the firm has established a dominant position in a promising new market that is expected to generate above-average firm growth for the next five years.

A few weeks after selling the AirCon holdings, Lepage bought 2.5 million shares of Spectra Vision over a period of four days. The typical trading volume of this security is about 1.3 million shares per day, and his purchases drove the price up 9% over the 4-day period. These trades were designated as appropriate for 13 accounts of differing sizes, including performance-based accounts, charitable trusts, and private accounts. The shares were allocated to the accounts on a pro rata basis at the end of each day at the average price for the day.

One of the investment criteria used in evaluating equity holdings is the corporate governance structure of the issuing company. Because Lepage has dealt with this topic extensively, he has been asked to present a talk of corporate governance issues to the firm's portfolio managers and analysts at the next monthly meeting. At the meeting, Lepage makes the following comments: "When evaluating the corporate governance policies of a company, you should begin by assessing the responsibilities of the company's board of directors. In general, the board should have the responsibility to set long-term objectives that are consistent with shareholders' interests. In addition, the board must be responsible for hiring the CEO and setting his or her compensation package such that the CEO's interests are aligned with those of the shareholders. In that way the board can spend its time on matters other than monitoring the CEO. A firm with good corporate governance policies should also have an audit committee made up of independent board members that are experienced in auditing and related legal matters. The audit committee should have full access to the firm's financial statements and the ability to question auditors hired by the committee."

According to the CFA Institute Standards, Lepage's statement that AirCon could be put in play is:

- A. permissible.
- B. not permissible since it blurs the distinction between opinion and fact.
- C. permissible if he is aware that a client of MontBlanc's M&A division is secretly preparing a tender offer for AirCon.

ANSWER: A

Explanation:

permissible. Lepage explicitly identifies the takeover assessment as his opinion by stating, "In my opinion." This presentation satisfies the core Communication with Clients and Prospective Clients requirement that members and candidates distinguish opinion from factual information in research communications. His wording does not present a possible acquisition as an established fact or as a certainty; instead, it appropriately characterizes it as a judgment about a potential future development. He also provides a material qualification to the opinion: although AirCon could become a takeover target, he believes that possibility is already fully reflected in the stock's market value. That caveat gives recipients relevant context about the investment implication of the view rather than implying an unqualified buy recommendation based on

takeover speculation. The Standards permit analysts to form and communicate investment opinions, forecasts, and interpretations, provided they are presented fairly and are not misrepresented as facts. In this case, the statement's clear attribution to Lepage's judgment is the critical feature. CFA Institute's overview of the professional requirements is available in its [Code of Ethics and Standards of Professional Conduct](#), including the standard governing communications with clients and prospective clients. See also CFA Institute's [Ethics and Standards](#) resources.

QUESTION NO: 18

Gabrielle Reneau, CFA, and Jack Belanger specialize in options strategies at the brokerage firm of Damon and Damon. They employ fairly sophisticated strategies to construct positions with limited risk, to profit from future volatility estimates, and to exploit arbitrage opportunities. Damon and Damon also provide advice to outside portfolio managers on the appropriate use of options strategies. Damon and Damon prefer to use, and recommend, options written on widely traded indices such as the S&P 500 due to their higher liquidity. However, they also use options written on individual stocks when the investor has a position in the underlying stock or when mispricing and/or trading depth exists.

In order to trade in the one-year maturity puts and calls for the S&P 500 stock index, Reneau and Belanger contact the chief economists at Damon and Damon, Mark Blair and Fran Robinson. Blair recently joined Damon and Damon after a successful stint at a London investment bank. Robinson has been with Damon and Damon for the past ten years and has a considerable record of success in forecasting macroeconomic activity. In his forecasts for the U.S. economy over the next year, Blair is quite bullish, for both the U.S. economy and the S&P 500 stock index. Blair believes that the U.S. economy will grow at 2% more than expected over the next year. He also states that labor productivity will be higher than expected, given increased productivity through the use of technological advances. He expects that these technological advances will result in higher earnings for U.S. firms over the next year and over the long run.

Reneau believes that the best S&P 500 option strategy to exploit Blair's forecast involves two options of the same maturity, one with a low exercise price, and the other with a high exercise price. The beginning stock price is usually below the two option strike prices. She states that the benefit of this strategy is that the maximum loss is limited to the difference between the two option prices.

Belanger is unsure that Blair's forecast is correct. He states that his own reading of the economy is for a continued holding pattern of low growth, with a similar projection for the stock market as a whole. He states that Damon and Damon may want to pursue an options strategy where a put and call of the same maturity and same exercise price are purchased. He asserts that such a strategy would have losses limited to the total cost of the two options.

Reneau and Belanger are also currently examining various positions in the options of Brendan Industries. Brendan Industries is a large-cap manufacturing firm with headquarters in the midwestern United States. The firm has both puts and calls sold on the Chicago Board Options Exchange. Their options have good liquidity for the near money puts and calls and for those puts and calls with maturities less than four months. Reneau believes that Brendan Industries will benefit from the economic expansion forecasted by Mark Blair, the Damon and Damon economist. She decides that the best option strategy to exploit these expectations is for her to pursue the same strategy she has delineated for the market as a whole.

Shares of Brendan Industries are currently trading at \$38. The following are the prices for their exchange-traded options.

<i>Option Type</i>	<i>Strike Price</i>	<i>Maturity</i>	<i>Price</i>
Call	\$35	30 days	\$4.50
Call	\$40	30 days	\$1.50
Put	\$35	30 days	\$1.80
Put	\$40	30 days	\$3.50

As a mature firm in a mature industry, Brendan Industries stock has historically had low volatility. However, Belanger's analysis indicates that with a lawsuit pending against Brendan Industries, the volatility of the stock price over the next 60 days is greater by several orders of magnitude than the implied volatility of the options. He believes that Damon and Damon should attempt to exploit this projected increase in Brendan Industries' volatility by using an options strategy where a put and call of the same maturity and same exercise price are utilized. He advocates using the least expensive strategy possible.

During their discussions, Reneau cites a counter example to Brendan Industries from last year. She recalls that Nano Networks, a technology firm, had a stock price that stayed fairly stable despite expectations to the contrary. In this case, she utilized an options strategy where three different calls were used. Profits were earned on the strategy because Nano Networks' stock price stayed fairly stable. Even if the stock price had become volatile, losses would have been limited. Later that week, Reneau and Belanger discuss various credit option strategies during a lunch time presentation to Damon and Damon client portfolio managers. During their discussion, Reneau describes a credit option strategy that pays the holder a fixed sum, which is agreed upon when the option is written, and occurs in the event that an issue or issuer goes into default. Reneau declares that this strategy can take the form of either puts or calls. Belanger states that this strategy is known as either a credit spread call option strategy or a credit spread put option strategy.

Reneau and Belanger continue by discussing the benefits of using credit options. Reneau mentions that credit options written on an underlying asset will protect against declines in asset valuation. Belanger says that credit spread options protect against adverse movements of the credit spread over a referenced benchmark.

Regarding their comments concerning the credit option strategy that pays the holder a fixed sum, are Reneau and Belanger correct or incorrect?

- A. Only Belanger is correct.
- B. Only Reneau is correct.
- C. Both are correct -OR- both are incorrect.

ANSWER: B

Explanation:

Only Reneau is correct. The described contract is a binary credit option, also called a digital credit option. Its defining payoff feature is that the holder receives a predetermined fixed amount when the specified credit event, such as default by the referenced issuer or issue, occurs. The amount is set when the contract is written; it is not a variable payoff determined by the magnitude of a subsequent change in a credit spread or in the value of the reference obligation. Binary credit options may be structured as calls or puts, depending on the particular credit-event and payoff convention specified in the contract. Thus, Reneau correctly identifies both the fixed-payment default-contingent nature of the strategy and the possible put or call forms. This classification is consistent with the distinction between digital/binary options, which have fixed contingent payoffs, and other derivative structures whose payoff varies with an underlying market measure. For background on the fixed-payoff nature of binary options, see the [U.S. SEC investor alert on binary options](#). The CFA Program curriculum's derivatives coverage includes credit derivatives and option payoff structures; see the [CFA Program curriculum overview](#).

QUESTION NO: 19

Travis Smith, CFA, is chief economic strategist and market analyst for Nashville Capital Management. He is developing a forecast of the S&P 500 stock market index utilizing different approaches.

Using microeconomic analysis, Smith wants to value the S&P using a dividend discount model (DDM) valuation approach. The trailing recent 52-week dividend for the S&P 500 equaled \$60. Used as a proxy for the nominal risk-free rate, Treasury rates are as follows:

- 3-month T-bill rate: 3.5%
- 30-year T-bond rate: 5.0%

Smith uses an equity market premium equal to 6%. His estimate for the long-term outlook for ROE is 11%, and the long-run earnings retention rate is estimated at 40%.

Smith also is forecasting the market trends using varied macroeconomic techniques. He believes that security prices reflect expectations about the general economy. During his monitoring and forecasting of the overall economy, Smith is evaluating cyclical indicators and the business cycle.

Smith has focused his analysis on three indicators:

1. Index of industrial production.
2. Interest rate spread between 10-year T-bonds and the fed funds rate.

3. Stock prices.

Smith is particularly interested in using stock market trends to predict economic turning points.

In conducting his research, Smith has found that the business cycle appears to be in the slowdown phase. In his capital markets forecasting activities, Smith looks at government policy, and attempts to predict business and consumer activity, along with foreign trade. Smith has determined that government policy has a significant influence on the business cycle, and he is trying to predict changes in government policy. Smith predicts that the government fiscal policy will loosen and that the Federal Reserve monetary policy will tighten. Smith estimates the following variables:

- Short-term neutral interest rate: 3.5%
- Nominal GDP long-term growth rate trend: 4.25%
- Federal Reserve inflation target: 2.25%

Smith forecasts that inflation will increase to 3.0%, and nominal GDP will grow at a 1.5% rate. Smith's supervisor, Rasheed Gupta, requests a valuation of the S&P500 using a free cash flow to equity (FCFE) model. Gupta makes the following statement:

"A valuation model that replaces dividends with free cash flow to equity is a good alternative to the

DDM. If I remember correctly, free cash flow to equity equals net income plus depreciation." Using the dividend discount model, Smith's estimate of the current S&P 500 valuation should be closest to:

- A. 545.
- B. 950.
- C. 3915

ANSWER: B

Explanation:

950. is the closest estimate under a constant-growth dividend discount model. The sustainable long-run dividend growth rate is estimated using the retention-growth relationship: $g = ROE \times \text{retention rate}$. With an 11% return on equity and a 40% earnings retention rate, growth is 4.4%. Because this is a long-horizon equity-index valuation, the 30-year Treasury bond rate is the appropriate nominal risk-free-rate proxy. Adding the 6% equity market premium gives a required return of 11.0%.

The \$60 trailing dividend is a most-recent dividend, so it must be grown one period before applying the Gordon growth formula. Thus, next year's expected dividend is $\$60 \times 1.044 = \62.64 . The estimated index value is therefore $\$62.64 \div (0.110 - 0.044) = \949.09 . Rounding to the nearest available estimate produces 950. This use of a forward dividend and a required return that exceeds perpetual growth is consistent with the constant-growth DDM framework. For background on the Gordon growth model, see [CFA Institute: Equity Valuation Concepts and Basic Tools](#) and [NYU Stern: Valuation](#).

QUESTION NO: 20

A family office is considering a commitment to a closed-end private equity fund. Capital will be called over the first five years, distributions are expected to begin in year four, and the fund has a 12-year legal life. The family office has substantial current liquidity needs for tax payments and planned charitable gifts.

The constraint most important to evaluate before making the commitment is the family's:

- A. liquidity needs.
- B. return objective.
- C. ability to rebalance public equity holdings daily.

ANSWER: A

Explanation:

The most important additional constraint is liquidity. A closed-end private equity fund requires investors to meet capital calls when requested and provides little ability to withdraw capital before the fund realizes its investments. The family office must ensure that sufficient liquid assets remain available to meet both anticipated commitments and unexpected capital calls.

The planned tax payments and charitable gifts make liquidity planning especially important. Expected return and the fund's historical performance may be relevant to the investment decision, but they do not address the risk that the family office may need to sell other assets at an unfavorable time to satisfy its obligations.

QUESTION NO: 21

Arthur Campbell, CFA, is the founder of Campbell Capital Management (CCM), a money management firm focused solely on high net worth individuals. Campbell started CCM two years ago after a 25-year career with a large bank trust department. CCM provides portfolios tailored to match the unique situation of each individual client. All of CCM's clientele have balanced portfolios. CCM does not use derivatives or exotic instruments to manage any of its portfolios. CCM's equity style is defined as growth at a reasonable price (GARP). Most of CCM's portfolios are managed under one of the following three approaches:

- Aggressive (10 accounts): 70% stocks and 30% bonds.
- Moderate (4 accounts): 50% stocks and 50% bonds.
- Conservative (25 accounts): 30% stocks and 70% bonds.

CCM has recently added the following two clients:

1. Harold Moss, a long-time acquaintance of Campbell. Campbell and Moss agreed to an investment policy statement in which Moss' portfolio will be managed under CCM's Aggressive approach but will have significantly greater exposure to technology stocks than a typical CCM aggressive portfolio.
2. Richard Bateman is a successful businessman with a \$5 million portfolio. Bateman wants his portfolio managed using a conservative approach, and he specifically states that no options or futures are to be used.

A current client, Stan North, has decided to retire. North would like to reduce his risk exposure from aggressive to conservative. CCM moves North's account, including its historical performance, to the conservative composite.

At the end of 2008, CCM reports the moderate portfolio composite performance but does not include the associated number of accounts.

CCM reported the 2008 returns on its conservative composite as shown in Figure 1:

Figure 1: CCM Conservative Composite Returns: Year Ending December 31, 2007

	Market Value 12/31/2007	Asset Mix	Return
Stocks	\$95,875,000	30%	8.5%
Bonds	\$182,000,000	70%	5.2%
Cash	\$47,125,000	0%	3.4%
Total	\$325,000,000		

The data shown in Figure 2 relates to Moss portfolio transactions from the 2nd quarter of 2008.

Figure 2: CCM Equity Returns for the Second Quarter of 2008

	Moss Portfolio
Market value 3/31/2008	\$2,500,000
Cash inflows(outflows)	
4/30/2008	\$300,000
5/31/2008	
Market value 6/30/2008	\$3,100,000

CCM established three types of composites: aggressive, moderate, and conservative. State whether CCM's composites are correctly defined according to GIPS?

- A. No, CCM must define an equity and fixed-income benchmark.
- B. No, CCM must quantify risk parameters.
- C. Yes, if CCM establishes a tight allowable range.

ANSWER: C

Explanation:

"Yes, if CCM establishes a tight allowable range." is correct. Under the GIPS standards, a composite is an aggregation of one or more portfolios managed according to a similar investment mandate, objective, or strategy. CCM's aggressive, moderate, and conservative groupings can represent distinct balanced-portfolio strategies because they are based on different intended equity and fixed-income exposures. GIPS does not prescribe a required number of composites, require every firm to use a particular set of labels, or require a benchmark merely to define a composite.

To support consistent composite membership, CCM should document each strategy clearly, including sufficiently narrow allowable allocation ranges around its target stock/bond mix. A tight range makes the investment mandate meaningful and helps ensure that accounts in a given composite are actually managed under the same strategy. For example, a portfolio designated conservative should remain within documented conservative allocation guidelines rather than drifting into an allocation that is substantively moderate or aggressive. This approach enables composite performance to be representative of the strategy presented to prospective clients.

The GIPS framework's definition and construction requirements are available in the [GIPS Standards for Firms](#) published by CFA Institute. CFA Institute also provides supporting implementation materials through its [GIPS Resources](#).

QUESTION NO: 22

Rowan Brothers is a full service investment firm offering portfolio management and investment banking services. For the last ten years, Aaron King, CFA, has managed individual client portfolios for Rowan Brothers, most of which are trust accounts over which King has full discretion. One of King's clients, Shelby Pavlica, is a widow in her late 50s whose husband died and left assets of over \$7 million in a trust, for which she is the only beneficiary.

Pavlica's three children are appalled at their mother's spending habits and have called a meeting with King to discuss their concerns. They inform King that their mother is living too lavishly to leave much for them or Pavlica's grandchildren upon her death. King acknowledges their concerns and informs them that, on top of her ever-increasing spending, Pavlica has recently been diagnosed with a chronic illness. Since the diagnosis could indicate a considerable increase in medical spending, he will need to increase the risk of the portfolio to generate sufficient return to cover the medical bills and spending and still maintain the principal. King restructures the portfolio accordingly and then meets with Pavlica a week later to discuss how he has altered the investment strategy, which was previously revised only three months earlier in their annual meeting.

During the meeting with Pavlica, Kang explains his reasoning for altering the portfolio allocation but does not mention the meeting with Pavlica's children. Pavlica agrees that it is probably the wisest decision and accepts the new portfolio allocation adding that she will need to tell her children about her illness, so they will understand why her medical spending requirements will increase in the near future. She admits to King that her children have been concerned about her spending. King assures her that the new investments will definitely allow her to maintain her lifestyle and meet her higher medical spending needs.

One of the investments selected by King is a small allocation in a private placement offered to him by a brokerage firm that often makes trades for King's portfolios. The private placement is an equity investment in ShaleCo, a small oil exploration company. In order to make the investment, King sold shares of a publicly traded biotech firm, VNC Technologies. King also held shares of VNC, a fact that he has always disclosed to clients before purchasing VNC for their accounts. An hour before submitting the sell order for the VNC shares in Pavlica's trust account, King placed an order to sell a portion of his position in VNC stock. By the time Pavlica's order was sent to the trading floor, the price of VNC had risen, allowing Pavlica to sell her shares at a better price than received by King.

Although King elected not to take any shares in the private placement, he purchased positions for several of his clients, for whom the investment was deemed appropriate in terms of the clients' objectives and constraints as well as the existing composition of the portfolios. In response to the investment support, ShaleCo appointed King to their board of directors. Seeing an opportunity to advance his career while also protecting the value of his clients' investments in the company, King gladly accepted the offer. King decided that since serving on the board of ShaleCo is in his clients' best interest, it is not necessary to disclose the directorship to his clients or his employer. For his portfolio management services, King charges a fixed percentage fee based on the value of assets under management. All fees charged and other terms of service are disclosed to clients as well as prospects. In the past month, however, Rowan Brothers has instituted an incentive program for its portfolio managers. Under the program, the firm will award an all-expense-paid vacation to the Cayman islands for any portfolio manager who generates two consecutive quarterly returns for his clients in excess of 10%. King updates his marketing literature to ensure that his prospective clients are fully aware of his compensation arrangements, but he does not contact current clients to make them aware of the newly created performance incentive.

Does the fee structure at Rowan Brothers and King's disclosure of the compensation structure violate any CFA Institute Standards of Professional Conduct?

Fee structure Disclosure

- A. No Yes
- B. Yes No
- C. No No

ANSWER: A

Explanation:

"No Yes" is correct. Rowan Brothers' asset-based management fee and performance-based vacation incentive are not inherently prohibited by the CFA Institute Standards. A firm may use compensation arrangements that reward investment performance, provided the arrangement does not displace the member's duty to act for the benefit of clients and any resulting conflicts are fully and fairly disclosed. The vacation award creates a meaningful incentive for a manager to seek returns above the stated threshold and potentially to assume additional portfolio risk. That incentive is therefore a conflict of interest requiring disclosure under Standard VI(A), Disclosure of Conflicts.

King's disclosure is inadequate because he communicated the newly created performance incentive only to prospective clients through updated marketing literature. Existing clients also need timely disclosure of this material change in compensation, as it may affect their assessment of the manager's objectivity and the risks that could be undertaken in managing their portfolios. Disclosure must be sufficiently prominent and complete for clients and prospects to evaluate the conflict before it affects, or continues to affect, the advisory relationship. Accordingly, the compensation program itself does not violate the Standards, but failure to disclose it to current clients does. CFA Institute's guidance on conflicts and disclosure is available in its [Standards of Practice Guidance](#) and [Code and Standards resources](#).

QUESTION NO: 23 - (SIMULATION)

SIMULATION

Joe and Sara Finnegan are both 62 years old and live in Kerrville, Texas. They are retired and have a combined investable net worth of \$2 million, the bulk of which was inherited from Sara's father's estate. Included in their total wealth is Mr. Finnegan's \$500,000 defined-contribution retirement plan that is managed separately in a 401(k) retirement plan. Joe Finnegan makes the investment decisions for his 401(k) plan, but Sara Finnegan makes the investment decisions for their other portfolio. Mr. Finnegan will not begin withdrawing funds from his retirement plan until he reaches the age of 70.

The Finnegans have no children, but they have agreed to pay the nursing home expenses for Joe's 86 year old father, who is in very poor health. These expenses are projected to be \$130,000 per year, and are expected to last for at least three years. The Finnegans home in Kerrville is valued at \$750,000. The Finnegans do not have a mortgage on their home. They enjoy traveling around the world and project living expenses to total \$ 115,000 per year. The Finnegans' entire income is generated from their portfolio and is taxed at 15%. The Finnegans would like to exclude inflation from any and all projections related to their account, so that they can evaluate their position based on current dollar amounts.

Mr. Finnegan's 401(k) plan is held in a local bank trust department. The trust department offers its clients a range of portfolio allocations from aggressive to conservative as shown in Exhibit 1. Without regard for asset class characteristics or his own risk and return objectives, Mr. Finnegan has selected a portfolio that is equally weighted in each asset class, he has instructed his trust manager to rebalance the portfolio at the end of each year to maintain the equal weighting. Mr. Finnegan is concerned about potential losses in his account, but prefers not to make any investment decisions beyond maintaining his initial allocation.

Identify and discuss two weaknesses commonly found in defined-contribution retirement plans that are evident in Joe Finnegan's allocation of his retirement account.

ANSWER: See the explanation for the answer

Explanation:

Two evident defined-contribution-plan weaknesses are:

Naïve (1/n) diversification. Joe allocates his 401(k) equally among every available asset class without considering the asset classes' risk/return characteristics, correlations, expected returns, or his own objectives, risk tolerance, and retirement horizon. This is the common participant behavior of assuming that each menu option should receive an equal share simply because it is offered. An equal-weight allocation is not necessarily a diversified or suitable allocation.

Status quo bias (inertia). Joe does not want to make investment decisions after choosing the initial allocation and instructs the manager to rebalance annually back to that same allocation. Thus, he maintains his original choice without determining whether it remains appropriate as market values, his retirement date, withdrawal needs, or risk capacity change. Although periodic rebalancing can be appropriate when tied to a deliberate target asset allocation, Joe's rebalancing merely perpetuates an arbitrary initial allocation.

QUESTION NO: 24

Dan Draper, CFA is a portfolio manager at Madison Securities. Draper is analyzing several portfolios which have just been assigned to him. In each case, there is a clear statement of portfolio objectives and constraints, as well as an initial strategic asset allocation. However, Draper has found that all of the portfolios have experienced changes in asset values. As a result, the current allocations have drifted away from the initial allocation. Draper is considering various rebalancing strategies that would keep the portfolios in line with their proposed asset allocation targets.

Draper spoke to Peter Sterling, a colleague at Madison, about calendar rebalancing. During their conversation, Sterling made the following comments:

Comment 1: Calendar rebalancing will be most efficient when the rebalancing frequency considers the volatility of the asset classes in the portfolio.

Comment 2: Calendar rebalancing on an annual basis will typically minimize market impact relative to more frequent rebalancing.

Draper believes that a percentage-of-portfolio rebalancing strategy will be preferable to calendar rebalancing, but he is uncertain as to how to set the corridor widths to trigger rebalancing for each asset class. As an example, Draper is evaluating the Rogers Corp. pension plan, whose portfolio is described in Figure 1.

Asset Class	Expected Return	Standard Deviation	Average Transaction Cost	Correlation With Other Assets in Portfolio
U.S. small-cap stocks	10%	15%	0.30%	0.21
Emerging market stocks	14%	22%	0.40%	0.10
Real estate limited partnership	16%	10%	3.00%	0.16
U.S. government bonds	6%	2%	0.05%	0.14

Draper has been reviewing Madison files on four high net worth individuals, each of whom has a \$1 million portfolio. He hopes to gain insight as to appropriate rebalancing strategies for these clients. His research so far shows:

Client A is 60 years old, and wants to be sure of having at least \$800,000 upon his retirement. His risk tolerance drops dramatically whenever his portfolio declines in value. He agrees with the Madison stock market outlook, which is for a long-term bull market with few reversals.

Client B is 35 years old and wants to hold stocks regardless of the value of her portfolio. She also agrees with the Madison stock market outlook.

Client C is 40 years old, and her absolute risk tolerance varies proportionately with the value of her portfolio. She does not agree with the Madison stock market outlook, but expects a choppy stock market, marked by numerous reversals, over the coming months.

A buy and hold strategy:

- A. would be appropriate for Client C.
- B. is an example of a concave strategy.
- C. is a constant proportion strategy with a floor greater than zero and a multiplier equal to 1.

ANSWER: C

Explanation:

“is a constant proportion strategy with a floor greater than zero and a multiplier equal to 1.” is correct. In the portfolio-insurance framework, a constant-proportion portfolio insurance strategy allocates assets according to the relationship: risky-asset exposure = multiplier $\times$ (portfolio value – floor). When the multiplier equals 1, the risky-asset exposure is simply the cushion above the floor. The remaining amount, equal to the floor, is held in the safe asset. This construction produces a linear relationship between portfolio value and the value of the risky asset, which is economically equivalent to a buy-and-hold position in the risky asset combined with a fixed allocation to the safe asset.

The positive floor is essential to this characterization because it identifies the fixed safe-asset component and distinguishes the strategy’s insured-portfolio formulation. As asset values move, a multiplier of 1 does not create the amplified, dynamically adjusted risky exposure associated with multipliers above 1. Thus, buy and hold is properly viewed as the special case of constant-proportion portfolio insurance with a positive floor and a multiplier of 1. This follows the CFA curriculum’s treatment of portfolio rebalancing and dynamic asset-allocation strategies; see the [CFA Program Curriculum overview](#) and CFA Institute’s [Portfolio Management: Theory and Practice](#).

QUESTION NO: 25

Jack Thomas and Tim Bentley are analysts for Bond Analytics (BA). BA provides bond analysis for mutual fund managers, hedge fund managers, and institutional money managers in the United States. BA specializes in the valuation of international bonds and callable bonds, using intrasector analysis to find undervalued bonds. In addition to valuing the bonds, they also advise clients on whether to hedge currency risk for international bonds. Thomas has been a particularly strong advocate of hedging the currency risk of international bonds, especially in emerging markets, using forward contracts when they are available.

At a morning meeting, Thomas and Bentley are trying to decide whether to hedge the currency risk of a large issue of bonds from a Thai manufacturer of pressed steel, Nakhon Metals. The client considering purchasing the bonds is a large U.S. mutual fund, Epsilon Funds. Epsilon has started to explore the possibility of earning higher returns through currency management using forward contracts. Thomas and Bentley discuss the various hedges of currency risk for the Nakhon Metals bond. One possibility is using a forward hedge position on the Thai baht. A second possibility is using forward contracts where the baht is delivered for Korean won. Thomas states that the second hedge would be pursued if the won was expected to appreciate more against the U.S. dollar than the baht. In the second hedge, the manager would sell won for dollars at the future spot rate.

Thomas and Bentley gather the following information on the expected changes in the various currencies, the 1-year cash rates in the respective countries, and the expected return on the Nakhon bond.

Yield on Nakhon Metals bond in Thai baht terms	5.20%
Cash rate in Thailand	2.50%
Expected change in the baht relative to the U.S. dollar	2.80%
Cash rate in Korea	3.20%
Expected change in the won relative to the U.S. dollar	6.40%
Cash rate in Japan	4.20%
Expected change in the yen relative to the U.S. dollar	3.50%
Cash rate in United States	6.50%

Additionally, the Nakhon Metals bond has a duration of 7.30 and is being compared against a bond denominated in U.S. dollars, issued by Powhatan Industries. The Powhatan bond has a duration of 4.2 and a yield of 4.50%. Whichever bond is purchased will be held for the next year. Thomas projects that the yield for the Nakhon Metals bond is expected to increase by 15 basis points while the yield on the Powhatan Industries bond is expected to stay constant.

The following day, Thomas and Bentley discuss the market for and valuation of callable and long duration bonds. They believe that interest rates are temporarily low and for this reason want to be careful about their bond investments. Although they could hedge interest rate risk, they prefer not to because they believe it reduces the ultimate long-term return.

Thomas says that due to secular changes in the bond market, bonds with structures are expected to become more scarce. He says that the problem with callable bonds has been that they typically trade at a premium due to their scarcity. Bentley states that bonds with long durations also trade at a premium because they are scarce as well.

Thomas states that the performance of callables and non-callables may differ when interest rates change due to the inherent call risk. He discusses the relative performance under two scenarios:

- Scenario A: Interest rates are near coupon rates and fall for both callables and non-callables by the same amount.
- Scenario B: Interest rates are historically very low and rise for both callables and non-callables by the same amount.

Based on interest rate expectations and ignoring currency effects, determine whether the Nakhon Metals bond or Powhatan Industries bond should be more attractive over the one-year time horizon.

- The Nakhon Metals bond should be more attractive.
- The Powhatan Industries bond should be more attractive.

C. Neither bond should be more attractive.

ANSWER: B

Explanation:

The Powhatan Industries bond should be more attractive. The relevant comparison is the expected one-year local-currency return, because currency effects are explicitly excluded. Nakhon begins with a 0.70% yield advantage over Powhatan (5.20% versus 4.50%). However, its substantially greater duration means that its price is more sensitive to the projected increase in its yield. Using the duration approximation, the yield increase that would just offset Nakhon's 0.70% initial yield advantage is approximately $0.70\% \div 7.30 = 0.0959\%$, or 9.59 basis points. At that breakeven increase, the two bonds would provide approximately equal holding-period returns, assuming Powhatan's yield is unchanged.

Nakhon's yield is expected to rise by 15 basis points, exceeding the 9.59-basis-point breakeven increase. Its expected duration-based price decline is therefore large enough to more than eliminate its higher starting yield. Powhatan, whose yield is expected to remain constant, does not incur a corresponding price loss over the horizon. Consequently, the expected return comparison favors Powhatan Industries. This applies the fixed-income principle that duration provides a first-order estimate of a bond price change for a given yield change; CFA Institute's fixed-income curriculum is outlined at [CFA Program Curriculum](#), and a useful overview of duration is available from [Investor.gov](#).

QUESTION NO: 26

A US-based investor owns a portfolio of Australian equities and has fully hedged the Australian dollar exposure using rolling one-month forward contracts. Over the next month, Australian short-term interest rates are expected to exceed US short-term interest rates, and the spot exchange rate is expected to remain unchanged.

Relative to leaving the currency exposure unhedged, the currency hedge will most likely:

- A. generate a negative carry.
- B. generate a positive carry.
- C. have no return effect because the spot exchange rate is unchanged.

ANSWER: A

Explanation:

The currency hedge will generate a negative carry. Under covered interest parity, when Australian interest rates exceed US interest rates, the Australian dollar sells at a forward discount relative to the US dollar. A US investor hedging Australian dollar assets sells Australian dollars forward and, with an unchanged spot rate, realizes the forward discount as a loss on the forward position.

An unhedged investor would not incur this forward-contract loss. Although the hedge reduces uncertainty from exchange-rate movements, it does not eliminate the effect of interest-rate differentials embedded in forward pricing.

QUESTION NO: 27

John Green, CFA, is a sell-side technology analyst at Federal Securities, a large global investment banking and advisory firm. In many of his recent conversations with executives at the firms he researches, Green has heard disturbing news. Most of these firms are lowering sales estimates for the coming year. However, the stock prices have been stable despite management's widely disseminated sales warnings. Green is preparing his quarterly industry analysis and decides to seek further input. He calls Alan Volk, CFA, a close friend who runs the Initial Public Offering section of the investment banking department of Federal Securities.

Volk tells Green he has seen no slowing of demand for technology IPOs. "We've got three new issues due out next week, and two of them are well oversubscribed." Green knows that Volk's department handled over 200 IPOs last year, so he is confident that Volk's opinion is reliable. Green prepares his industry report, which is favorable. Among other conclusions, the report states that "the future is still bright, based on the fact that 67% of technology IPOs are oversubscribed." Privately,

Green recommends to Federal portfolio managers that they begin selling all existing technology issues, which have "stagnated," and buy the IPOs in their place.

After carefully evaluating Federal's largest institutional client's portfolio, Green contacts the client and recommends selling all of his existing technology stocks and buying two of the upcoming IPOs, similar to the recommendation given to Federal's portfolio managers. Green's research has allowed him to conclude that only these two IPOs would be appropriate for this particular client's portfolio. Investing in these IPOs and selling the current technology holdings would, according to

Green, "double the returns that your portfolio experienced last year."

Federal Securities has recently hired Dirks Bentley, a CFA candidate who has passed Level 2 and is currently preparing to take the Level 3 CFA® exam, to reorganize Federal's compliance department. Bentley tells Green that he may be subject to CFA Institute sanctions due to inappropriate contact between analysts and investment bankers within Federal Securities. Bentley has recommended that Green implement a firewall to rectify the situation and has outlined the key characteristics for such a system. Bentley's suggestions are as follows:

1. Any communication between the departments of Federal Securities must be channeled through the compliance department for review and eventual delivery. The firm must create and maintain watch, restricted, and rumor lists to be used in the review of employee trading.
2. All beneficial ownership, whether direct or indirect, of recommended securities must be disclosed in writing.
3. The firm must increase the level of review or restriction of proprietary trading activities during periods in which the firm has knowledge of information that is both material and nonpublic. Bentley has identified two of Green's analysts, neither of whom have non-compete contracts, who are preparing to leave Federal Securities and go into competition. The first employee, James Ybarra, CFA, has agreed to take a position with one of Federal's direct competitors. Ybarra has contacted existing Federal clients using a client list he created with public records. None of the contacted clients have agreed to move their accounts as Ybarra has requested. The second employee, Martha Cliff, CFA, has registered the name Cliff Investment Consulting (CIC), which she plans to use for her independent consulting business. For the new business venture, Cliff has developed and professionally printed marketing literature that compares the new firm's services to that of Federal Securities and highlights the significant cost savings that will be realized by switching to CIC. After she leaves Federal, Cliff plans to target many of the same prospects that Federal Securities is targeting, using an address list she purchased from a third-party vendor.

Bentley decides to call a meeting with Green to discuss his findings.

After discussing the departing analysts, Green asks Bentley how to best handle the disclosure of the following items: (1) although not currently a board member, Green has served in the past on the board of directors of a company he researches and expects that he will do so again in the near future; and (2) Green recently inherited put options on a company for which he has an outstanding buy recommendation. Bentley is contemplating his response to Green.

According to Standard 11(A) Material Nonpublic Information, when Green contacted Volk, he:

- A. violated CFA Institute Standards.
- B. violated of CFA Institute Standards unless the contact was disclosed to his clients.
- C. did not violate CFA Institute Standards since he was conducting a legitimate research activity.

ANSWER: C

Explanation:

"did not violate CFA Institute Standards since he was conducting a legitimate research activity." is correct. The relevant provision is currently designated Standard II(A), Material Nonpublic Information. It prohibits members and candidates from acting or causing others to act on information that is both material and nonpublic. Green's conversation with Volk concerns general demand conditions in the technology IPO market, including the degree of oversubscription of upcoming offerings. This is market-color information that can contribute to an analyst's assessment of investor sentiment and industry conditions; the facts do not establish that Green received confidential, issuer-specific information that would be material to the value of a security.

Green may therefore use this input as part of a reasonable research process, provided he continues to base recommendations on an adequately supported analysis and observes applicable firm controls. The fact that Volk works in the investment-banking area may warrant effective information-barrier procedures at Federal Securities, particularly because that department can possess material nonpublic information. But the mere contact does not itself demonstrate misuse of such information. CFA Institute's standard is triggered by receipt and use of material nonpublic information, not by ordinary,

legitimate research communications lacking that information. See the [CFA Institute Code of Ethics and Standards of Professional Conduct](#) and its [Standards of Practice Guidance](#).

QUESTION NO: 28

Theresa Bair, CFA, a portfolio manager for Brinton Investment Company (BIC), has recently been promoted to lead portfolio manager for her firm's new small capitalization closed-end equity fund, the Quaker Fund. BIC is an asset management firm headquartered in Holland with regional offices in several other European countries.

After accepting the position, Bair received a letter from the three principals of BIC. The letter congratulated Bair on her accomplishment and new position with the firm and also provided some guidance as to her new role and the firm's expectations. Among other things, the letter stated the following:

"Because our firm is based in Holland and you will have clients located in many European countries, it is essential that you determine what laws and regulations are applicable to the management of this new fund. It is your responsibility to obtain this knowledge and comply with appropriate regulations. This is the first time we have offered a fund devoted solely to small capitalization securities, so we will observe your progress carefully. You will likely need to arrange for our sister companies to quietly buy and sell Quaker Fund shares over the first month of operations. This will provide sufficient price support to allow the fund to trade closer to its net asset value than other small-cap closed-end funds. Because these funds generally trade at a discount to net asset value, if our fund trades close to its net asset value, the market may perceive it as more desirable than similar funds managed by our competitors."

Bair heeded the advice from her firm's principals and collected information on the laws and regulations of three countries: Norway, Sweden, and Denmark. So far, all of the investors expressing interest in the Quaker Fund are from these areas. Based on her research, Bair decides the following policies are appropriate for the fund:

Note: Laws mentioned below are assumed for illustrative purposes.

- For clients located in Norway the fund will institute transaction crossing, since, unlike in Holland, the practice is not prohibited by securities laws or regulations. The process will involve internally matching buy and sell orders from Norwegian clients whenever possible. This will reduce brokerage fees and improve the fund's overall performance.
- For clients located in Denmark, account statements that include the value of the clients' holdings, number of trades, and average daily trading volume will be generated on a monthly basis as required by Denmark's securities regulators, even though the laws in Holland only require such reports to be generated on a quarterly basis.
- For clients located in Sweden, the fund will not disclose differing levels of service that are available for investors based upon the size of their investment. This policy is consistent with the laws and regulations in Holland. Sweden's securities regulations do not cover this type of situation.

Three months after the inception of the fund, its market value has grown from \$200 million to \$300 million and Bair's performance has earned her a quarter-end bonus. Since it is now the end of the quarter, Bair is participating in conference calls with companies in her fund. Bair calls into the conference number for Swift Petroleum. The meeting doesn't start for another five minutes, however, and as Bair waits, she hears the CEO and CFO of Swift discussing the huge earnings restatement that will be necessary for the financial statement from the previous quarter. The restatement will not be announced until the year's end, six months from now. Bair does not remind the officers that she can hear their conversation. Once the call has ended, Bair rushes to BIC's compliance officer to inform him of what she has learned during the conference call. Bair ignores the fact that two members of the firm's investment banking division are in the office while she is telling the compliance officer what happened on the conference call. The investment bankers then proceed to sell their personal holdings of Swift Petroleum stock. After her meeting, Bair sells the Quaker Fund's holdings of Swift Petroleum stock.

After her conference call with Swift Petroleum, Bair should have:

- A. included the information in a research report to make it public before selling the holdings from the Quaker Fund.
- B. attempted to have Swift publicly disclose the earnings restatement before informing the compliance officer of the information.
- C. informed the compliance officer and then publicly disclosed the information in a research report before selling the Swift stock.

ANSWER: B

Explanation:

"attempted to have Swift publicly disclose the earnings restatement before informing the compliance officer of the information" is the correct action under CFA Institute Standard II(A), Material Nonpublic Information. The anticipated "huge earnings restatement" is highly likely to be material because a reasonable investor would consider it important in deciding whether to buy, sell, or hold Swift Petroleum shares. It is also nonpublic, as the company does not intend to announce it for six months. Bair must not act or cause others to act on that information until it has been broadly disseminated to the marketplace.

When a member possesses material nonpublic information, the appropriate initial step is to encourage the issuer to make prompt public disclosure. In this situation, Bair should contact the appropriate company representative and seek disclosure of the restatement. If the company will not disclose the information, Bair should then consult BIC's compliance function while maintaining strict confidentiality and following firm procedures designed to prevent misuse of the information. Public dissemination must come from an appropriate public channel, rather than from a research report based on the confidential information. This approach protects market integrity and allows all market participants access to the information at substantially the same time. See the CFA Institute's [Code of Ethics and Standards of Professional Conduct](#) and its [Ethics and Standards resources](#).

QUESTION NO: 29

Bartholomew Hope, CFA, is the chief investment officer of Children's Trust Foundation (CTF), a foundation that supports a wide variety of child-related causes. CTFs total assets total \$2.3 billion.

The foundation's current asset mix is 55% stocks, 35% bonds, and 10% cash (T-bills earn 3.5%). The foundation provides \$126.5 million annually for a variety of programs for children, which is forecasted to remain more or less constant in real terms. Hope does not envision any major capital expenditures for the foreseeable future.

CTF's investment portfolio has underperformed its benchmark over the past three years. Hope believes corrective action is needed to address the issue of poor performance. Hope wants to evaluate the possibility the portfolio's risk to reward profile. Hope's staff generates Exhibit 1, which reviews the relevant necessary metrics to make the asset mix decision. The overall cost of investing the assets is 75 basis points.

Exhibit 1: Expected Returns, Risk, and Correlations for Asset under Consideration

	<i>Mean Return</i>	<i>Standard Deviation</i>	<i>Correlation</i>		
			<i>1</i>	<i>2</i>	<i>3</i>
Current portfolio	12.1%	10.0%	1.00		
Venture capital	11.4%	18.9%	0.50	1.00	
Hedge funds	13.5%	10.3%	0.75	0.25	1.00

One of the members of Hope's staff, Rene Meyer, includes a report on the key attributes of investing in venture capital funds. The report includes the following sections:

Structure: "Indirect venture capital investments are achieved by pooling the funds of multiple investors into a limited partnership (LP). The investors are limited partners who allow a general partner to control the investments for a period of 7 to 10 years. The general partner also invests capital, earning a management fee of 1.5% to 2.5% of invested capital and a carried interest fee, which is generally 20% of the fund profits, after the fund's hurdle rate has been met."

Strategy: "Because initial public offerings are a primary exit strategy of venture capital investing, the correlation between public equity markets and returns on venture capital investments are positive. Therefore, the primary focus of any venture capital investment undertaken by Glendale should be long-term return enhancement rather than significant diversification. In addition, Glendale must make sure that all of the committed capital is available for the required up front cash distribution to the general partner at the beginning of the investment period."

Hope recognizes there are several unique strategies within the hedge fund group that have very different risk to reward trade-offs. Hope identifies three hedge funds as potential investment opportunities for the CTF. Exhibit 2 lists the funds under consideration and their most recent securities transactions.

Exhibit 2: Hedge Fund Transactions

Fund X	Fund Y	Fund Z
Fund X purchased the stock of four companies within the chemical manufacturing industry while simultaneously selling short the stock of three companies in the transportation industry. The relative size of the trades left the fund with a net short exposure.	A long position was taken in Burg Inc., a grocery store chain. At the same time, a short position was taken in a second grocery store chain, TRE Corp. The overall beta of the trades was equal to 0.01 and the net investment was equal to zero.	Fund Z purchased a long position in an S&P 500 Index while simultaneously taking a short position in a broad based index tracking the Japanese market. Fund Z expected the S&P 500 to rise and the Japanese market to decline over the next year.

While Clark presents the hedge funds, Hope comments that he is concerned with the potential difficulties in measuring hedge fund manager performance. Glendale's charter has strict requirements regarding the performance assessment of investment managers who control the assets of the foundation. Hope believes the performance of alternative investments presented may be difficult to evaluate against a benchmark index as required by Glendale's charter.

Which of the following is least likely to be a reason for Hope's concern over the ability to track hedge fund manager performance against a benchmark index as required by the Glendale Foundation charter?

- A. Values used to compute the hedge fund index returns typically suffer from stale pricing, which causes artificially low risk and correlation estimates.
- B. Indexes available for comparison remove the historical returns of hedge funds that have been dissolved.
- C. When a hedge fund is added to the available indexes, the fund's historical returns are added to the historical returns of the index, artificially improving overall performance.

ANSWER: A

Explanation:

"Values used to compute the hedge fund index returns typically suffer from stale pricing, which causes artificially low risk and correlation estimates." is least likely to be the stated reason for concern about using a hedge fund index as a performance benchmark. The central benchmark-construction concern for hedge fund indexes is that their reported historical returns can be systematically distorted by the voluntary and changing population of constituent funds. In particular, an index may retain only surviving funds in its available history and may incorporate favorable prior returns when successful funds are subsequently added. Those practices can make an index's reported historical return unrepresentative of the opportunity set actually available to investors at the time.

Stale pricing can arise when underlying holdings are illiquid or are not marked continuously at observable market prices. It is principally a valuation and return-smoothing issue, affecting reported volatility and correlation statistics rather than representing the characteristic membership-history bias that undermines the use of hedge fund indexes for manager benchmarking in this context. Accordingly, it is the least direct explanation for Hope's specific concern about tracking a manager against an index required by the charter. The CFA Institute discusses hedge fund index limitations and reporting biases in its [alternative investments refresher readings](#); related benchmark-selection principles are addressed in the [CFA Institute Standards of Practice Handbook](#).

QUESTION NO: 30

Wealth Management's top economist, Frederick Milton, is an economic cycle forecaster- Milton's economic forecasts indicate an economic upswing that will impact all goods and services sectors. Milton presents his economic findings to the rest of Wealth Management's professionals at their monthly meeting. All are excited about Milton's forecast of an improving economic condition that should translate into a steadily rising stock market.

Nathaniel Norton and Timothy Tucker have confidence in Milton's capabilities and decide to meet with their clients. Their first meeting is with Elizabeth Mascarella to whom Norton recommends a dynamic asset allocation strategy to take advantage of Milton's forecast. However, Mascarella is concerned because the somewhat persistent back-and-forth of economic activity

has translated into an oscillating stock market. Mascarella questions Norton's recommendation and asks Tucker which strategy should be followed if the market continues as it has, instead of making such "wonderful" strides.

It is one year later and Frederick Milton's economic forecast has been correct, and the market has trended upward as expected. Mascarella's strategic allocation to equity, which was \$600,000 of a total portfolio of \$1,000,000, has increased 20%. Her overall portfolio, which contains equity, debt, and some cash, is now valued at \$1,150,000. Tucker meets with Mascarella and indicates it may be time to rebalance her portfolio.

Assuming a steadily rising market, the best strategy for Mascarella is:

- A. buy and hold.
- B. constant mix.
- C. constant proportion portfolio insurance.

ANSWER: C

Explanation:

Constant proportion portfolio insurance is the best choice when the market is expected to rise steadily. Under CPPI, the investor establishes a portfolio floor and calculates the cushion as total portfolio value less that floor. The strategy then invests a constant multiple of that cushion in risky assets, such as equities, with the remaining amount held in the safe asset. As equity values rise, the cushion increases and CPPI systematically increases exposure to equities. This positive-feedback, or momentum-oriented, rebalancing approach enables the portfolio to participate increasingly in a sustained upward trend.

In this scenario, the forecast calls for a broadly improving economy and a steadily rising stock market. CPPI is specifically designed to benefit from that pattern because it buys additional risky assets following gains, while its floor-based construction also identifies the minimum portfolio value the investor seeks to protect. The multiplier determines the responsiveness of equity exposure to changes in the cushion; a multiplier greater than one creates the defining CPPI behavior. This application of dynamic allocation aligns the strategy's risk exposure with both the upward market outlook and the investor's downside floor objective. CFA Institute's curriculum overview is available at [CFA Program Curriculum](#), and CFA Institute discusses portfolio-management topics within its [Refresher Readings](#).

QUESTION NO: 31

Joan Weaver, CFA and Kim McNally, CFA are analysts for Cardinal Fixed Income Management. Cardinal provides investment advisory services to pension funds, endowments, and other institutions in the U.S. and Canada. Cardinal recommends positions in investment-grade corporate and government bonds.

Cardinal has largely advocated the use of passive approaches to bond investments, where the predominant holding consists of an indexed or enhanced indexed bond portfolio. They are exploring, however, the possibility of using a greater degree of active management to increase excess returns. The analysts have made the following statements.

- Weaver: "An advantage of both enhanced indexing by matching primary risk factors and enhanced indexing by minor risk factor mismatching is that there is the potential for excess returns, but the duration of the portfolio is matched with that of the index, thereby limiting the portion of tracking error resulting from interest rate risk."
- McNally: "The use of active management by larger risk factor mismatches typically involves larger duration mismatches from the index, in an effort to capitalize on interest rate forecasts." As part of their increased emphasis on active bond management, Cardinal has retained the services of an economic consultant to provide expectations input on factors such as interest rate levels, interest rate volatility, and credit spreads. During his presentation, the economist states that he believes long-term interest rates should fall over the next year, but that short-term rates should gradually increase. Weaver and McNally are currently advising an institutional client that wishes to maintain the duration of its bond portfolio at 6.7. In light of the economic forecast, they are considering three portfolios that combine the following three bonds in varying amounts.

	Annualized Bond Yield	Bond Maturity in years	Semiannual Coupon Payment	Portfolio		
				1	2	3
Bond A	6.2%	5.25	\$3.10		50%	60%
Bond B	6.6%	8.50	\$3.30	100%		10%
Bond C	7.1%	19.75	\$3.55		50%	30%

Weaver and McNally next examine an investment in a semiannual coupon bond newly issued by the Manix Corporation, a firm with a credit rating of AA by Moody's. The specifics of the bond purchase are provided below given Weaver's projections. It is Cardinal's policy that bonds be evaluated for purchase on a total return basis.

Investment horizon	1 year
Cost of funds for Cardinal	9.00%
Bond maturity in years	20 years
Initial annualized bond yield	6.50%
Reinvestment rate for coupon	5.00%
Annual coupon rate paid semiannually	6.50%
Projected annualized yield to maturity at end of investment horizon	6.00%

One of Cardinal's clients, the Johnson Investment Fund (JIF), has instructed Weaver and McNally to recommend the appropriate debt investment for \$125,000,000 in funds. JIF is willing to invest an additional 15% of the portfolio using leverage. JIF requires that the portfolio duration not exceed 5.5. Weaver recommends that JIF invest in bonds with a duration of 5.2. The maximum allowable leverage will be used and the borrowed funds will have a duration of 0.8. JIF is considering investing in bonds with options and has asked McNally to provide insight into these investments. McNally makes the following comments:

"Due to the increasing sophistication of bond issuers, the amount of bonds with put options is increasing, and these bonds sell at a discount relative to comparable bullets. Putables are quite attractive when interest rates rise, but, we should be careful if with them, because valuation models often fail to account for the credit risk of the issuer."

Another client, Blair Portfolio Managers, has asked Cardinal to provide advice on duration management. One year ago, their portfolio had a market value of \$3,010,444 and a dollar duration of \$108,000; current figures are provided below:

	Market Value	Duration	Dollar Duration
Bond 1	\$940,000	3.8	\$35,720
Bond 2	\$820,000	2.8	\$22,960
Bond 3	\$780,000	4.7	\$36,660
Bond 4	\$621,000	3.5	\$21,735

Considering the economic consultant's forecast, determine the most appropriate portfolio for Weaver and McNally to recommend to their client.

- A. Portfolio 1.
- B. Portfolio 2.
- C. Portfolio 3.

ANSWER: B

Explanation:

Portfolio 2 is appropriate because it implements a barbell positioning consistent with a nonparallel yield-curve forecast while maintaining the client's required portfolio duration of 6.7. The forecast calls for long-term rates to decline and short-term rates to rise. Bond prices move inversely to yields, so the long-maturity component of a barbell benefits from the anticipated fall in long rates. Because that longer-term bond has relatively high duration, its price appreciation is particularly responsive to the decline in yields. The short-maturity component is exposed to the expected increase in short rates, but its lower duration limits the associated price decline. Combining the short- and long-maturity bonds allows the portfolio to express a steepening/curve-shape view rather than relying principally on an intermediate-maturity exposure. This is an active yield-curve strategy: the manager allocates risk toward the maturity sectors expected to outperform, while the aggregate duration constraint controls overall parallel interest-rate sensitivity. Duration is the standard first-order measure of a bond portfolio's sensitivity to yield changes, as described in the [CFA Institute Fixed-Income Analysis refresher](#). The relationship between duration, price sensitivity, and yield changes is also summarized by the [FINRA bond-duration guidance](#).

QUESTION NO: 32

Percentile	1%	2.5%	5%	10%	50%	95%	97.5%
Return	-25%	-20%	-18%	-12%	10%	15%	20%

Figure 1: Monte Carlo Simulation Data

The top row (Percentile) of the table reports the percentage of simulations that had returns below those reported in the second row (Return). For example, 95% of the simulations provided a return of 15% or less, and 97.5% of the simulations provided a return of 20% or less.

Dennon's supervisor, Peggy Lane, has become concerned that Dennon's use of VAR in his portfolio management practice is inappropriate and has called for a meeting with him. Lane begins by asking Dennon to justify his use of VAR methodology and explain why the estimated VAR varies depending on the method used to calculate it. Dennon presents Lane with the following table detailing VAR estimates for another Apple client, the York Pension Plan.

VAR Method	Estimate	Dennon's Comments
Historical	\$19 million	Future volatility for the York Pension Plan holdings is expected to be greater than what the portfolio experienced in the past. This VAR estimate reflects a narrower distribution of returns than what can be expected in future periods.
Analytical (variance/covariance)	\$26 million	Since this method assumes normally distributed returns while the returns on the York Pension Plan are actually negatively skewed, the analytical estimate of VAR is biased upward.
Monte Carlo	\$33 million	This method allows for any distributional assumptions necessary and also considers the interaction of asset returns to provide a forward-looking estimate of VAR for the York Pension Plan. If normal distributions were assumed and a very large number of simulations were run, this method would converge to a VAR estimate of \$ 19 million.

To round out the analytical process, Lane suggests that Dennon also incorporate a system for evaluating portfolio performance. Dennon agrees to the suggestion and computes several performance ratios on the York Pension Plan portfolio to discuss with Lane. The performance figures are included in the following table. Note that the minimum acceptable return is the risk-free rate.

Figure 3: Performance Ratios for the York Pension Plan

Ratio	2008	2007	2006
Sharpe	0.85	0.86	0.85
RoMAD	1.0	1.2	1.5
Sortino	0.73	0.81	0.88

Using the Monte Carlo simulation method, the 1-day, 5% VAR for the Jude Fund is closest to:

- A. \$15 million.
- B. \$18 million.
- C. \$20 million.

ANSWER: B

Explanation:

\$18 million. is correct because a 1-day, 5% VaR identifies the loss threshold associated with the worst 5% of simulated one-day outcomes. The required return cutoff is therefore the fifth percentile of the Monte Carlo return distribution, not the 95th percentile. In the simulation table, the fifth-percentile return is -18%. Put differently, the simulation indicates a 5% probability that the portfolio's one-day return will be worse than -18%, or that its loss will exceed 18% of portfolio value.

VaR is conventionally reported as a positive currency loss. The Jude Fund has a current portfolio value of \$100 million, so the monetary VaR is calculated as: $\$100 \text{ million} \times 0.18 = \18 million . Thus, at the stated one-day horizon and 5% tail probability, the estimated VaR is \$18 million. This result is a quantile-based estimate from the simulated distribution; it expresses a threshold loss at the selected confidence level rather than an expected loss beyond that threshold. CFA Institute's investment-risk curriculum includes VaR among the risk measures used in portfolio analysis; see [CFA Program Curriculum](#). For a technical definition of VaR and its confidence-level interpretation, see [Risk.net's Value at Risk definition](#).

QUESTION NO: 33

William Bliss, CFA, runs a hedge fund that uses both managed futures strategies and positions in physical commodities. He is reviewing his operations and strategies to increase the return of the fund. Bliss has just hired Joseph Kanter, CFA, to help him manage the fund because he realizes that he needs to increase his trading activity in futures and to engage in futures strategies other than fully hedged, passively managed positions. Bliss also hired Kanter because of Kanter's experience with swaps, which Bliss hopes to add to his choice of investment tools.

Bliss explains to Kanter that his clients pay 2% on assets under management and a 20% incentive fee. The incentive fee is based on profits after having subtracted the risk-free rate, which is the fund's basic hurdle rate, and there is a high water mark provision. Bliss is hoping that Kanter can help his business because his firm did not earn an incentive fee this past year. This was the case despite the fact that, after two years of losses, the value of the fund increased 14% during the previous year. That increase occurred without any new capital contributed from clients. Bliss is optimistic about the near future because the term structure of futures prices is particularly favorable for earning higher returns from long futures positions.

Kanter says he has seen research that indicates inflation may increase in the next few years. He states this should increase the opportunity to earn a higher return in commodities and suggests taking a large, margined position in a broad commodity index. This would offer an enhanced return that would attract investors holding only stocks and bonds. Bliss mentions that not all commodity prices are positively correlated with inflation so it may be better to choose particular types of commodities in which to invest. Furthermore, Bliss adds that commodities traditionally have not outperformed stocks and bonds either on a risk-adjusted or absolute basis. Kanter says he will research companies who do business in commodities, because buying the stock of those companies to gain commodity exposure is an efficient and effective method for gaining indirect exposure to commodities.

Bliss agrees that his fund should increase its exposure to commodities and wants Kanter's help in using swaps to gain such exposure. Bliss asks Kanter to enter into a swap with a relatively short horizon to demonstrate how a commodity swap works. Bliss notes that the futures prices of oil for six months, one year, eighteen months, and two years are \$55, \$54, \$52, and \$51 per barrel, respectively, and the risk-free rate is less than 2%.

Bliss asks how a seasonal component could be added to such a swap. Specifically, he asks if either the notional principal or the swap price can be higher during the reset closest to the winter season and lower for the reset period closest to the summer season. This would allow the swap to more effectively hedge a commodity like oil, which would have a higher demand in the winter than the summer. Kanter says that a swap can only have seasonal swap prices, and the notional principal must stay constant. Thus, the solution in such a case would be to enter into two swaps, one that has an annual reset in the winter and one that has an annual reset in the summer.

Based on the given information, the fixed price for the 2-year swap with semi-annual reset is probably:

- A. undefined since the futures price are decreasing with the horizon.
- B. closest to \$55.
- C. closest to \$53.

ANSWER: C

Explanation:

The fixed price is correctly identified as **closest to \$53**. For a commodity swap with semiannual settlements, the fixed swap price is set so that the present value of the fixed payments equals the present value of the floating payments implied by the relevant futures or forward prices. Accordingly, it is a discount-factor-weighted average of the prices applicable to the four reset dates: \$55, \$54, \$52, and \$51 per barrel.

With a risk-free rate below 2%, discounting is modest. The simple average of the four quoted futures prices is exactly \$53 per barrel. Because earlier cash flows receive slightly greater present-value weight than later cash flows, and the earlier futures prices are higher, the precise fixed price would be marginally above \$53. However, the low interest rate makes this upward adjustment small, so \$53 is clearly the best approximation.

This valuation principle is consistent with the general no-arbitrage approach to swaps: the fixed leg is determined from the present value of the expected floating-leg cash flows at inception. See the CFA Program curriculum overview at [CFA Institute](#) and CME Group's educational material on commodity derivatives at [CME Group](#).

QUESTION NO: 34

Daniel Castillo and Ramon Diaz are chief investment officers at Advanced Advisors (AA), a boutique fixed-income firm based in the United States. AA employs numerous quantitative models to invest in both domestic and international securities.

During the week, Castillo and Diaz consult with one of their investors, Sally Michaels. Michaels currently holds a \$10,000,000 fixed-income position that is selling at par. The maturity is 20 years, and the coupon rate of 7% is paid semiannually. Her coupons can be reinvested at 8%. Castillo is looking at various interest rate change scenarios, and one such scenario is where the interest rate on the bonds immediately changes to 8%.

Diaz is considering using a repurchase agreement to leverage Michaels's portfolio. Michaels is concerned, however, with not understanding the factors that impact the interest rate, or repo rate, used in her strategy. In response, Castillo explains the factors that affect the repo rate and makes the following statements:

1. "The repo rate is directly related to the maturity of the repo, inversely related to the quality of the collateral, and directly related to the maturity of the collateral. U.S. Treasury bills are often purchased by Treasury dealers using repo transactions, and since they have high liquidity, short maturities, and no default risk, the repo rate is usually quite low. "
2. "The greater control the lender has over the collateral, the lower the repo rate. If the availability of the collateral is limited, the repo rate will be higher."

Castillo consults with an institutional investor, the Washington Investment Fund, on the effect of leverage on bond portfolio returns as well as their bond portfolio's sensitivity to changes in interest rates. The portfolio under discussion is well diversified, with small positions in a large number of bonds. It has a duration of 7.2. Of the \$200 million value of the portfolio, \$60 million was borrowed. The duration of borrowed funds is 0.8. The expected return on the portfolio is 8% and the cost of borrowed funds is 3%.

The next day, the chief investment officer for the Washington Investment Fund expresses her concern about the risk of their portfolio, given its leverage. She inquires about the various risk measures for bond portfolios. In response, Diaz distinguishes between the standard deviation and downside risk measures, making the following statements:

1. "Portfolio managers complain that using variance to calculate Sharpe ratios is inappropriate. Since it considers all returns over the entire distribution, variance and the resulting standard deviation are artificially inflated, so the resulting Sharpe ratio is artificially deflated. Since it is easily calculated for bond portfolios, managers seek a more realistic measure of risk is the semivariance, which measures the distribution of returns below a given return, such as the mean or a hurdle rate."
2. "A shortcoming of VAR is its inability to predict the size of potential losses in the lower tail of the expected return distribution. Although it can assign a probability to some maximum loss, it does not predict the actual loss if the maximum loss is exceeded. If Washington Investment Fund is worried about catastrophic loss, shortfall risk is a more appropriate measure, because it provides the probability of not meeting a target return."

AA has a corporate client, Shafer Materials with a €20,000,000 bond outstanding that pays an annual fixed coupon rate of 9.5% with a 5-year maturity. Castillo believes that euro interest rates may decrease further within the next year below the coupon rate on the fixed rate bond. Castillo would like Shafer to issue new debt at a lower euro interest rate in the future. Castillo has, however, looked into the costs of calling the bonds and has found that the call premium is quite high and that the investment banking costs of issuing new floating rate debt would be quite steep. As such he is considering using a swaption to create a synthetic refinancing of the bond at a lower cost than an actual refinancing of the bond. He states that in order to do so, Shafer should buy a payer swaption, which would give them the option to pay a lower floating interest rate if rates drop.

Diaz retrieves current market data for payer and receiver swaptions with a maturity of one year. The terms of each instrument are provided below:

Payer swaption fixed rate 7.90%

Receiver swaption fixed rate 7.60%

Current Euribor 7.20%

Projected Euribor in one year 5.90%

Diaz states that, assuming Castillo is correct, Shafer can exercise a swaption in one year to effectively call in their old fixed rate euro debt paying 9.5% and refinance at a floating rate, which would be 7.5% in one year.

The return on the Washington Investment Fund portfolio is closest to:

- A. 7.14%.
- B. 10.14%.
- C. 11.00%.

ANSWER: B

Explanation:

The correct return is **10.14%**. The \$200 million portfolio earns the stated expected return of 8%, producing gross investment income of \$16.0 million. Because \$60 million of the portfolio is financed through borrowing at 3%, annual financing expense is \$1.8 million. Net income available to the fund's equity investors is therefore \$14.2 million.

Equity is the portion not funded by borrowing: \$200 million minus \$60 million, or \$140 million. Dividing the \$14.2 million net income by \$140 million of equity gives a leveraged portfolio return of 10.14% ($\$14.2/\140). Equivalently, the leveraged return formula is: $\text{return on assets} + (\text{debt/equity}) \times (\text{return on assets} - \text{borrowing cost})$. Thus, $8\% + (\$60/\$140) \times (8\% - 3\%) = 10.14\%$.

This result reflects positive leverage: the portfolio's expected asset return exceeds its financing cost, so borrowing increases the return earned on equity. The stated durations are relevant to evaluating the portfolio's sensitivity to interest-rate changes, but they are not needed to calculate the expected return requested here. CFA Institute's curriculum overview identifies fixed-income portfolio management and risk/return analysis as core Level III topics; see [CFA Program Curriculum](#). For a general explanation of leverage and its effect on investment returns, see [CFA Institute Refresher Readings](#).

QUESTION NO: 35

Bartholomew Hope, CFA, is the chief investment officer of Children's Trust Foundation (CTF), a foundation that supports a wide variety of child-related causes. CTFs total assets total \$2.3 billion.

The foundation's current asset mix is 55% stocks, 35% bonds, and 10% cash (T-bills earn 3.5%). The foundation provides \$126.5 million annually for a variety of programs for children, which is forecasted to remain more or less constant in real terms. Hope does not envision any major capital expenditures for the foreseeable future.

CTF's investment portfolio has underperformed its benchmark over the past three years. Hope believes corrective action is needed to address the issue of poor performance. Hope wants to evaluate the possibility the portfolio's risk to reward profile. Hope's staff generates Exhibit 1, which reviews the relevant necessary metrics to make the asset mix decision. The overall cost of investing the assets is 75 basis points.

Exhibit 1: Expected Returns, Risk, and Correlations for Asset under Consideration

	Mean Return	Standard Deviation	Correlation		
			1	2	3
Current portfolio	12.1%	10.0%	1.00		
Venture capital	11.4%	18.9%	0.50	1.00	
Hedge funds	13.5%	10.3%	0.75	0.25	1.00

One of the members of Hope's staff, Rene Meyer, includes a report on the key attributes of investing in venture capital funds. The report includes the following sections:

Structure: "Indirect venture capital investments are achieved by pooling the funds of multiple investors into a limited partnership (LP). The investors are limited partners who allow a general partner to control the investments for a period of 7 to 10 years. The general partner also invests capital, earning a management fee of 1.5% to 2.5% of invested capital and a carried interest fee, which is generally 20% of the fund profits, after the fund's hurdle rate has been met."

Strategy: "Because initial public offerings are a primary exit strategy of venture capital investing, the correlation between public equity markets and returns on venture capital investments are positive. Therefore, the primary focus of any venture capital investment undertaken by Glendale should be long-term return enhancement rather than significant diversification. In addition, Glendale must make sure that all of the committed capital is available for the required up front cash distribution to the general partner at the beginning of the investment period."

Hope recognizes there are several unique strategies within the hedge fund group that have very different risk to reward trade-offs. Hope identifies three hedge funds as potential investment opportunities for the CTF. Exhibit 2 lists the funds under consideration and their most recent securities transactions.

Exhibit 2: Hedge Fund Transactions

Fund X	Fund Y	Fund Z
Fund X purchased the stock of four companies within the chemical manufacturing industry while simultaneously selling short the stock of three companies in the transportation industry. The relative size of the trades left the fund with a net short exposure.	A long position was taken in Burg Inc., a grocery store chain. At the same time, a short position was taken in a second grocery store chain, TRE Corp. The overall beta of the trades was equal to 0.01 and the net investment was equal to zero.	Fund Z purchased a long position in an S&P 500 Index while simultaneously taking a short position in a broad based index tracking the Japanese market. Fund Z expected the S&P 500 to rise and the Japanese market to decline over the next year.

While Clark presents the hedge funds, Hope comments that he is concerned with the potential difficulties in measuring hedge fund manager performance. Glendale's charter has strict requirements regarding the performance assessment of investment managers who control the assets of the foundation. Hope believes the performance of alternative investments presented may be difficult to evaluate against a benchmark index as required by Glendale's charter.

State which of the following hedge funds identified by Hope and listed in Exhibit 2 most likely follows an equity market neutral strategy.

- A. Fund X.
- B. Fund Y.
- C. Fund Z.

ANSWER: B

Explanation:

Fund Y. is the equity market neutral strategy because its transactions pair a long position with a short position so that the portfolio has essentially no net exposure to broad equity-market movements. The reported beta of 0.01 is very close to zero, indicating that changes in the overall market should have minimal effect on the fund's return. Its zero net investment also indicates that the long and short dollar exposures are offsetting. In addition, using securities from the same industry helps reduce industry-specific exposure, allowing expected returns to depend primarily on relative security selection rather than market direction. This is the defining implementation of equity market neutral investing: identify relatively undervalued and overvalued equities, buy the former and short the latter, and construct the positions to neutralize systematic risk exposures as closely as practical. The approach seeks to earn an alpha-like return from pricing differences while maintaining very low market beta. Such strategies are commonly classified as relative-value hedge fund approaches and require ongoing monitoring because neutrality can drift as prices and betas change. CFA Institute describes hedge funds as strategies that can use long and short positions and derivatives to pursue specialized return sources; see [CFA Institute's alternative investments refresher readings](#). Additional background on market-neutral fund objectives is available from [Investor.gov's fund overview](#).

QUESTION NO: 36

Johnny Bracco, CFA, is a portfolio manager in the trust department of Canada National (CNL) in Toronto. CNL is a financial conglomerate with many divisions. In addition to the trust department, the firm sells financial products and has a research department, a trading desk, and an investment banking division.

Part of the company's operating procedures manual contains detailed information on how the firm allocates shares in oversubscribed stock offerings. Allocation is effected on a pro rata basis based

upon factors such as the size of a client's portfolio, suitability, and previous notification to participate in IPOs. Additionally, company policy discloses to clients that any trade needs to meet a minimum transaction size in an effort to control trading costs and to comply with best execution procedures.

One of Bracco's trust accounts is the Carobilo family trust, which contains a portion of nondiscretionary funds managed by Stephen Carobilo. Carobilo has a friend who runs a brokerage firm called First Trades, to which Carobilo tells Bracco to direct trades from the nondiscretionary accounts. Bracco has learned that First Trades charges a slightly higher trading fee than other brokers providing comparable services, and he discloses this to Carobilo. Due to high prices and limited supplies of oil, Bracco has been following companies in the energy sector. He believes this area of the economy is in turmoil and should present some mispricing opportunities. One company he has been researching is Stiles Corporation, which is working on a new type of hydrogen fuel cell that uses fusion technology to create energy. To date, no one has been able to successfully sustain a fusion reaction for an extended period of time. Bracco has been in close contact with Stiles' public relations department, has toured their laboratories, and has thoroughly researched fusion technology and Stiles' competitors. Bracco is convinced from his research, based upon various public sources, that Stiles is on the verge of perfecting this technology and will be the first firm to bring it to the marketplace. Jerry McNulty, CFA and vice president of the investment banking division of CNL, has been working with Stiles to raise new capital via a secondary offering of Stiles common shares. One day Bracco happened to be in a stall in the bathroom when McNulty and a colleague came in and discussed the fact that Stiles had perfected the fuel-cell technology, which will greatly increase the price of Stiles' stock. Stiles Corporation's board of directors includes Dr. Elaine Joachim, who is a physics professor at the University of Toronto. She also works part-time for Stiles Corporation as a consultant in their fusion technology laboratory. Her husband is a materials engineer who recently started performing consulting work for Stiles.

A routine audit by the quality control department at CNL discovered trading errors in several of Bracco's accounts involving an oversubscribed IPO. Some accounts received shares they should not have and others did not receive shares they should have. Bracco and his supervisor Jaime Gun, CFA, are taking responsibility to reverse the incorrect trades. Bracco told Gun, "I'll correct the trades based on our clients' investment policy statements, previous notification of intent, and according to the company's formula for allocating shares on a pro rata basis. In so doing, we will fairly allocate shares so even small accounts that did not meet minimum size requirements will receive some shares of the IPO." Gun replied to Bracco by saying, "I'll credit short-term interest back to the accounts that should not have received the shares and subtract interest from the accounts that should have received the shares."

That evening, Bracco and his wife attended the company holiday party for CNL employees and their spouses. Jerry McNulty, whose wife was ill and could not come to the party, arrived drunk from a meeting with Stiles' upper management. During the party McNulty made inappropriate advances toward many of the female employees and joked about the inadequacies of Stiles' managers.

Has Bracco violated any soft dollar standards regarding the Carobilo family trust? Bracco has:

- A. violated soft dollar standards because he did not satisfy the requirement of best execution.
- B. violated the soft dollar standards because client brokerage is to be used only for research purposes to benefit the client.

C. not violated any soft dollar standards since Carobilo directed the trades to a specific broker.

ANSWER: C

Explanation:

Bracco has *not violated any soft dollar standards since Carobilo directed the trades to a specific broker*. The relevant arrangement is client-directed brokerage: Stephen Carobilo expressly instructed Bracco to route transactions for the nondiscretionary portion of the trust to First Trades. Under the CFA Institute Standards of Professional Conduct, a client may direct the use of a particular broker, even where that broker's commission is higher than that charged by firms offering comparable execution services. Such direction is distinct from an investment manager selecting a broker in exchange for research or other soft-dollar benefits.

Bracco also disclosed the higher fee to Carobilo. That disclosure is important because client-directed brokerage can mean the client does not receive the best execution that otherwise might have been available through another broker. Once the informed client provides the direction, Bracco may carry it out; the resulting commission differential is attributable to the client's instruction rather than to Bracco obtaining an improper benefit or misusing client brokerage. The arrangement therefore does not constitute an impermissible soft-dollar practice. CFA Institute's overview of the ethical framework is available at [CFA Institute Ethics and Standards](#), and its professional conduct resources are available at [Standards of Practice](#).

QUESTION NO: 37

Ellen Truxel is the principal at Truxel Investment Management. Her firm uses bonds for income enhancement as well as capital gains. She occasionally uses sector quality bets and yield curve positioning to exploit her beliefs on the relative changes in sector credit quality and the direction of interest rates. She has recently hired John Timberlake to assist her in preparing data for the analysis of bond portfolios. Timberlake is a recent graduate of an outstanding undergraduate program in finance.

Truxel is considering investing in international bonds, as this is an arena she has previously ignored. During conversations, Truxel says it is her understanding that changes in international bond markets have made it easier to manage the duration of an international bond portfolio. Timberlake notes that the European Monetary Union has increased the availability of corporate bonds, making it easier to rotate across sectors.

In the domestic arena, Truxel is considering constructing a portfolio that matches the index on quality, call, sector, and cash flow dimensions and tilts the portfolio duration small amounts to take advantage of predictions of yield curve shifts. She states that this would be referred to as enhanced indexing with minor mismatches. Timberlake tells her that the most important determinant of her performance relative to other bond managers will be her ability to perform credit analysis.

Truxel then tells Timberlake that before they venture into new areas, she wants him to prepare an analysis of their current positions. Timberlake obliges and presents the following data on Truxel's current portfolio.

Bond Rating	Percent Weight in Truxel Portfolio	Sector Effective Duration	Percent Weight in Index Portfolio
AAA	12%	5.3	35%
AA	30%	5.4	30%
A	30%	5.5	25%
BBB	28%	5.0	10%

Given a parallel shift in the yield curve of 60 basis points for Treasury yields, the approximate percent change in the value of the Truxel portfolio is closest to:

A. 3.2.

B. 3.4.

C. 5.3.

ANSWER: A**Explanation:**

The correct answer is **3.2**. The first step is to calculate the portfolio's modified duration as the market-value-weighted average of the sector modified durations shown in the portfolio data. Using the weights and durations, the calculation is approximately: $(0.12 \times 5.3) + (0.30 \times 5.4) + (0.30 \times 5.5) + (0.28 \times 5.0) = 5.306$, or about 5.3. For a small parallel yield-curve movement, modified duration estimates the percentage price change as $-\text{modified duration} \times \text{change in yield}$. A 60-basis-point movement is 0.006 in decimal form, so the approximate magnitude of the portfolio value change is $5.3 \times 0.006 = 0.0318$, or about 3.2%.

The negative sign in the duration relationship indicates direction: if Treasury yields rise by 60 basis points, the portfolio value is expected to decrease by approximately 3.2%; if yields fall by that amount, its value is expected to increase by approximately 3.2%. Because the question asks for the approximate percent change without specifying the direction of the shift, 3.2% is the appropriate reported magnitude. This duration-based estimate is the standard first-order approach for a parallel shift in the yield curve. See CFA Institute's [Fixed-Income Analysis refresher reading](#) and its [CFA Program curriculum overview](#).

QUESTION NO: 38

Shirley Riley, CFA, has just been promoted, from vice president of trading to chief investment officer (CIO) at Crane & Associates, LLC (CA), a large investment management firm. Riley has been with CA for eight years, but she has much to learn as she assumes her new duties as CIO. Riley has decided to hire Denny Simpson, CFA, as the new compliance officer for CA. Riley and Simpson have been reviewing procedures and policies throughout the firm and have discovered several potential issues. Communications with Clients

Portfolio managers are encouraged to communicate with clients on a regular basis. At a minimum, managers are expected to contact clients on a quarterly basis to review portfolio performance. Each client must have an investment policy statement (IPS) created when their account is opened, specifying the objectives and constraints for their portfolio. IPSs are reviewed at client request at any time. Any time market conditions dictate a change in the investment style or strategy of a client portfolio, the client is notified immediately by phone or email.

Employee Incentive Program

CA offers several incentive programs to employees. One of the most popular of these programs is the CA IPO program. Whenever CA is involved in an initial public offering (IPO), portfolio managers are allowed to participate. The structure is simple—for every 100 shares purchased on behalf of a client, the manager is awarded five shares for his own account. The manager is thus rewarded for getting an IPO sold and at the same time is able to share in the results of the IPO. Any-time shares are remaining 72 hours before the IPO goes public, other employees are allowed to participate on a first-come, first-serve basis. Employees seem to appreciate this opportunity, but CA does not have exact numbers on employee participation in the program.

Private Equity Fund

CA has a private equity fund that is internally managed. This fund is made available only to clients with more than \$5 million in assets managed by CA, a policy that is fully disclosed in CA's marketing materials. Roughly one-third of the fund's assets are invested in companies that are either very small capitalization or thinly traded (or both). The pricing of these securities for monthly account statements is often difficult. CA support staff get information from different sources— sometimes using third party services, sometimes using CA valuation models. In some instances, a manager of the private equity fund will enter an order during the last trading hour of the month to purchase 100 shares of one of these small securities at a modest premium to the last trade price. If the trade gets executed, that price can then be used on the account statements. The small size of these trades does not significantly affect the fund's overall position in any particular company holding, which is typically several thousand shares.

Soft Dollar Usage

Several different managers at CA use independent research in developing investment ideas. One of the more popular research services among CA managers is "Beneath the Numbers (BTN)," which focuses on potential accounting abuses at prominent companies. This service often provides early warnings of problems with a stock, allowing CA managers the opportunity to sell their clients' positions before a negative surprise lowers the price. Stocks covered by BTN are typically widely held in CA client accounts. Managers at CA have been so happy with BTN that they have also subscribed to a new research product provided by the same authors—"Beneath the Radar (BTR)." BTR recommends small capitalization securities that are not large enough to attract much attention from large institutional investors. The results of BTR's recommendations are mixed thus far, but CA managers are willing to be patient.

As they discuss these issues, Riley informs Simpson that she is determined to bring CA into full compliance with the CFA Institute's "Asset Manager Code of Professional Conduct." The following questions should be answered with the Asset Manager Code as a guide.

In discussing the pricing of thinly traded securities in the private equity fund, Riley suggested that CA should choose one pricing method and apply it consistently, thus avoiding the need to disclose specific pricing methods to clients. Simpson responded that using third party sources or internal valuation models was acceptable, so long as the pricing sources are fully disclosed to clients.

Indicate whether Riley's comment or Simpson's response are correct or incorrect.

- A. Both Riley's comment and Simpson's response are correct.
- B. Riley's comment is not correct; however Simpson's response is correct.
- C. Riley is correct, while Simpson is not correct.

ANSWER: B

Explanation:

Riley's comment is not correct; however Simpson's response is correct. The Asset Manager Code requires an asset manager to disclose the valuation methods used to determine portfolio holdings and performance-related information. This obligation applies especially where securities are thinly traded, illiquid, or otherwise lack readily observable market prices, because the selected inputs and valuation approach can materially affect reported asset values and client account statements.

Consistent application of a sound valuation policy is important for fair and reliable reporting, but consistency does not eliminate the disclosure obligation. Clients need sufficient information to understand whether values come from independent third-party pricing services, internally developed models, market quotations, or a combination of sources. Such disclosure supports transparency and allows clients to evaluate the nature and limitations of valuations for difficult-to-price holdings. Simpson's approach appropriately permits both third-party sources and internal valuation models, provided CA fully discloses the sources and methodology to clients. This is aligned with the Code's client-first principles of diligence, reasonable care, and clear, complete communication about investment processes and portfolio valuation. See CFA Institute's [Asset Manager Code of Professional Conduct](#) and its [Standards of Practice Guidance](#).