

2014年05月FRM一级模拟考试(一)

1. Monte Carlo simulation and the historical method are two means of calculating VAR. Which of the following describes a disadvantage of the Monte Carlo method compared to the historical method of calculating VAR? The Monte Carlo method: ()

- I Takes advantage of the normal distribution.
 II Incorporates flexibility in modeling price paths.
 A. I only
 B. II only
 C. Both I and II
 D. Neither I nor II

2. Given the following information, which of the following amounts is closest to $d(1.0)$, the discount factor for the first year? ()

	Bond A	Bond B	Bond C
Bond maturity in years	0.5	1	2
Coupon	6.00%	12.00%	9.00%
Price	101.182	102.341	99.573

- A. 0.9099
 B. 0.9138
 C. 0.9655
 D. 0.9823
3. A portfolio manager received a report on his fund's performance. According to the report, the portfolio return was 2.5% with a standard deviation of 21% and a beta of 1.2. The risk-free rate over this period was 3.5%, the semi-standard deviation of the portfolio was 16%, and the tracking error of the fund was 2%. What is the difference between the value of the fund's Sortino ratio (assuming the risk-free rate is the minimum acceptable return) and its Sharpe ratio? ()
- A. 0.563.
 B. 0.347.
 C. -0.053.
 D. -0.015.
4. Gloria Brown, FRM, calculated the intrinsic value of RTN Company and expects the stock to generate a 25% annual return over the foreseeable future. However, Brown is concerned that her price forecast may be too high. She conducted a hypothesis test and concluded that at a 5% significance level, the null hypothesis can be rejected that RTN Company's investment return would be equal to or less than 25% per year. The one-tailed test utilized a z-test. Indicate the meaning of the significance level chosen by Brown and state the correct rejection region. ()

Significance level

Rejection region

- A. Brown will reject a true null hypothesis 5% of the time $z > 1.645$
 - B. Brown will reject a false null hypothesis 95% of the time $z < -1.645$
 - C. Brown will reject a true null hypothesis 5% of the time $z < -1.645$
 - D. Brown will reject a false null hypothesis 95% of the time $z > 1.645$
5. Assume a 3-year bond with a face value of \$100 pays a 3.5% coupon on a semiannual basis. What is the price of the bond according to the following spot rates?

Maturity (years)	Spot rate (%)
0.5	2.20%
1.0	2.25%
1.5	2.30%
2.0	2.35%
2.5	2.40%
3.0	2.45%

- A. 101.15.
 - B. 102.85.
 - C. 102.97.
 - D. 103.07.
6. An investor owns a stock and is bullish over the short term. Which of the following strategies will be the most appropriate one for this investor if the primary concern is to make a bet on the volatility of the stock? ()
- A. A covered call
 - B. A protective put
 - C. An at-the-money strip
 - D. An at-the-money strap
7. STT is a small mobile phone manufacturer that frequently makes investments in projects overseas. The organization has \$20 million in assets, which is comprised of 45% debt and 55% equity. A recent international project had a market risk premium of 5%, a country risk premium of 2%, and a beta of 1.6 (based on historical information). STT's current cost of borrowing is 10%, with a default spread of 7% given a relevant risk-free rate of 3%. What is STT's weighted average cost of capital given their marginal corporate tax rate of 35%?
- A. 12.783%.
 - B. 10.735%.
 - C. 9.858%.
 - D. 8.975%.
8. Paper Products Inc.'s research department developed a new type of environmentally friendly paper. The marketing department surveyed a random sample of 100 people. The survey is designed to gauge customer interest level in the new product. The sample indicates an average purchase of 2,500 reams per year with a variance of 160,000 reams. The researcher's

supervisor is concerned that the sample size is too small. The researcher advises against increasing the sample size, stating that “there is a risk of sampling from more than one population.” Determine the standard error of the sample mean and indicate whether the researcher’s statement is correct or incorrect. ()

	<u>Standard error</u>	<u>Researcher’s statement</u>
A.	8	Correct
B.	40	Incorrect
C.	8	Incorrect
D.	40	Correct

9. Bond A has an effective duration of 12.13 and a 2-year key rate exposure of \$4.04. You would like to hedge it with a security with an effective duration of 2.48 and a 2-year key rate exposure of 0.81 per \$100 face value. What amount of face value would be used to hedge the 2-year exposure?
- A. \$102.
B. \$163.
C. \$489.
D. \$499.
10. You are given the following information about a call option:
- Time to maturity = 3 years.
 - Continuous risk-free rate = 3%.
 - Continuous dividend yield = 2%.
 - $N(d_1) = 0.7$.
- What is the delta of this option ()
- A. -0.64
B. 0.36
C. 0.66
D. 0.70
11. Jimmy Deininger, FRM, is a portfolio manager who runs a large \$400,000,000 long equity portfolio. Relative to the S&P 500, Deininger’s portfolio has a beta of 1.07. Currently, S&P futures are trading at 1,368, and the futures multiplier is 250. Deininger wishes to create a hedge for his portfolio for the next four months using S&P futures. How many futures contracts should Deininger buy or sell to hedge this portfolio?
- A. Long hedge; 1,490 contracts.
B. Short hedge; 1,053 contracts.
C. Long hedge; 992 contracts.
D. Short hedge; 1,251 contracts.
12. You hold a \$75 million portfolio with a duration of nine and a one-year hedging horizon. There is an appropriate one-year futures contract quoted at 104-13 with a duration of eight and a contract size of \$100,000. Which of the following actions should you undertake to provide an appropriate hedge for small changes in yield? ()

- A. Short 639 futures contracts.
B. Long 639 futures contracts.
C. Short 809 futures contracts.
D. Long 809 futures contracts.
13. A loan portfolio is made up of ten noncorrelated loans, each with a value of \$1 million and an estimated probability of default of 3% in any given year. Recovery in the case of default is expected to be zero. Which of the following amounts is closest to the cumulative expected loss on the loan portfolio over two years? ()
A. \$0.03 million.
B. \$0.059 million.
C. \$0.30 million.
D. \$0.591 million.
14. An analyst determines that there is a 50% chance the economy will grow and that there is a 50% chance the economy will go into a recession. If the economy grows, there is a 60% chance that ABC stock will rise in price and a 40% chance it will fall in price. If a recession occurs, there is a 15% chance ABC'S stock price will rise and an 85% chance the price will fall. Given that ABC stock has risen in price, what is the probability the economy has grown?
A. 30%.
B. 50%.
C. 70%.
D. 80%.
15. What are the minimum values of an American-style and a European-style 3-month call option with a strike price of \$80 on a non-dividend-paying stock trading at \$86 if the risk-free rate is 3%?
- | | American | European |
|----|----------|----------|
| A. | \$6.00 | \$6.00 |
| B. | \$5.96 | \$6.00 |
| C. | \$6.00 | \$6.59 |
| D. | \$6.59 | \$6.59 |
16. Harriet Fields, an investment adviser specializing in selling municipal bonds, advertises on television explaining their safety and security. The bonds she is currently selling are limited obligation bonds backed only by the revenue generated from the projects they fund, which include a housing project and a golf course. Fields tells her prospective clients that the bonds are safe, secure, and offer generous interest payments. Which of the following statements is most correct regarding Fields's actions? ()
A. Fields did not violate the GARP Code of Conduct because municipal bonds are generally regarded as being safe investments.
B. Fields violated the part of the GARP Code of Conduct dealing with confidentiality.
C. Fields violated the GARP Code of Conduct when she misrepresented the bonds by not explaining their inherent risks.

- D. Fields has not violated any of the ethical responsibilities related to the GARP Code of Conduct.
17. A portfolio manager of an endowment wants to calculate a daily VAR for the portfolio. The €10,000,000 portfolio is restricted from using derivative securities. The annual return is expected to be 10%, with a standard deviation of 15%. If the manager assumes there are 250 trading days in a year and uses a 1% level of significance, which of the following amounts is closest to the daily VAR using the delta-normal method? ()
- A. -€217,043
B. -€221,350
C. -€241,100
D. -€245,100
18. A bank has a USD50,000,000 portfolio available for investing. The cost of funds for the USD50,000,000 is 4.5%. The bank lends 50% of the assets to domestic customers at an average loan rate of 6.25%. The rest of the portfolio is lent to UK clients at 7%. The current exchange rate is USD1.642/GBP. At the same time, the bank sells a forward contract equal to the expected receipts one year from now. The forward rate is USD1.58/GBP. The weighted average return to the bank on its assets is closest to: ()
- A. 1.99%
B. 2.13%
C. 2.26%
D. 4.61%
19. If the expected variance of a regression error term depends on the value of the independent variable, then this: ()
- A. Does not violate the assumptions of the classical linear regression model.
B. Would violate the assumptions of the classical linear regression model and is called serial correlation.
C. Would violate the assumptions of the classical linear regression model and is called homoskedasticity
D. Would violate the assumptions of the classical linear regression model and is called heteroskedasticity
20. Assume that a trader wishes to set up a hedge such that he sells \$100,000 of a Treasury bond and buys Treasury TIPS as a hedge. Using a historical yield regression framework, assume the DV01 on the T-bond is 0.072, the DV01 on the TIPS is 0.051, and the hedge adjustment factor (regression beta coefficient) is 1.2. What is the face value of the offsetting TIPS position needed to carry out this regression hedge?
- A. \$138,462.
B. \$169,412.
C. \$268,499.
D. \$280,067

21. A \$1,000 par bond with 22 years to maturity and a 4% semiannual coupon has a yield to maturity of 5%. Assuming a 5 basis point change in yield, the convexity of the bond is closest to: ()
- A. 258
 - B. 502
 - C. 942
 - D. 129
22. Between 1993 and 1995, Nick Leeson's actions resulted in losses of approximately \$1.25 billion and forced Barings into bankruptcy. Which of the following actions would least likely have prevented the bankruptcy of Barings' Bank? ()
- A. Information on account gains and losses being more transparent.
 - B. Management being more suspicious of huge reported profits.
 - C. All traders being required to meet SIMEX (Singapore International Monetary Exchange) standards.
 - D. A system of checks and balances being established to detect wildly speculative positions.
23. A bakery owner has decided to exit the business and sell her futures contracts. The contract calls for the delivery of 100 tons of wheat in five months at a price of \$105 per ton. The current price of wheat on the spot market is \$110 per ton. The risk-free rate is 4% (continuously compounded) and the market rate of interest is 6% (continuously compounded). Ignore trade and storage costs. Which of the following amounts is closest to the fair value for the contract? ()
- A. \$674
 - B. \$759
 - C. \$912
 - D. \$1,111
24. Colleagues Benjamin Ecko and Bernard Charles recently discussed the application of the normal distribution for random variables. Ecko claimed that the z-statistic measures the distance, in standard deviation units, that a given observation is from the population mean. Charles claimed that there is a 95% chance that the z-statistic lies above negative 1.96. Regarding the statements of Ecko and Charles: ()
- A. Ecko is correct; Charles is correct.
 - B. Ecko is correct; Charles is incorrect.
 - C. Ecko is incorrect; Charles is correct.
 - D. Ecko is incorrect; Charles is incorrect.
25. Which of the following statements is correct regarding the factors that led to the financial crisis at Metallgesellschaft Refining and Marketing? ()
- A. There was a cash flow problem that constrained the company's ability to fully execute the hedge already in place.
 - B. The maturity mismatch between its short and long positions is widely believed to have

- contributed to the problems.
- C. The shifting of prices so that the petroleum spot prices were greater than petroleum futures prices created a significant cash flow problem.
- D. Gains and losses on customer contracts were realized when customers entered into the contracts.
26. There are various bond interest payment classifications in use. Ignoring the risk of default, which of the following types of bonds may result in payment of less than the specified or implied amount/rate of interest? ()
- A. Income bonds
- B. Zero-coupon bonds
- C. Floating-rate bonds
- D. Participating bonds
27. The S&P 500 Index is trading at 1,015. The S&P 500 pays an expected continuously compounded dividend yield of 2%, and the continuously compounded risk-free rate is 4.1%. The value of a 3-month futures contract on the S&P 500 is closest to: ()
- A. 1,020.34
- B. 1,030.60
- C. 1,036.54
- D. 1,078.84
28. Two firms, Bell-Con and Bit-Con, enter into a fixed-for-fixed currency swap, with an agreement to make periodic payments annually. Bell-Con pays 3.5% in euros and receives 3% in U.S. dollars. At the beginning of the swap, Bell-Con pays a principal amount to Bro-Con of USD 250 million, and Bro-Con pays EUR 200 million to Bell-Con. What amounts are exchanged every period, and what happens to the principal amounts at the swap's conclusion?
- A. Bell-Con will pay EUR 8.75 million to Bro-Con, Bro-Con will pay USD 6 million to Bell-Con, and there will be no other payments exchanged at swap conclusion.
- B. Bell-Con will pay EUR 7 million to Bro-Con, Bro-Con will pay USD 7.5 million to Bell-Con, and the principal amounts will be re-exchanged at swap conclusion.
- C. Bell-Con will pay EUR 7 million to Bra-Con, Bro-Con will pay USD 6 million to Bell-Con, and there will be no other payments exchanged at swap conclusion.
- D. Bell-Con will pay EUR 8.75 million to Bra-Con, Bro-Con will pay USD 7.5 million to Bell-Con, and the principal amounts will be re-exchanged at swap conclusion.
29. A financial institution has entered into a plain vanilla currency swap with one of its customers. The period left on the swap is two years with the institution paying 4.5% on USD120 million and receiving 2% on JPY3,500 million annually. The current exchange rate is 120 JPY/USD, and the flat term structure in both countries generates a 3% rate in the United States and a 0.5% rate in Japan. The current value of this swap to the institution is closest to: ()
- A. \$93.3 million

- B. -\$93.3 million
C. \$118.1 million
D. -\$118.1 million
30. SCU stock is currently priced at \$106 per share, and the risk-free interest rate is 3.25%. Assuming that SCU does not pay any dividends, what is the lower bound of an American put option on SCU that expires in three months and has an exercise price of \$110?
A. \$0.
B. \$0.48.
C. \$3.11.
D. \$4.00.
31. Zero-coupon bonds issued by the Treasury are called STRIPS (separate trading on registered interest and principal securities). Which of the following statements regarding STRIPS and zero-coupon bonds is incorrect? ()
A. Longer-term C-STRIPS tend to trade cheap.
B. Shorter-term C-STRIPS tend to trade rich.
C. Investors generally pay a discount for zero-coupon bonds.
D. Zero-coupon bonds are generally more sensitive to interest rate changes than coupon bonds.
32. An investor is looking to create an options portfolio on XYZ stock that will have virtually zero Vega exposure while maximizing the ability to profit from increases in interest rates. If the current price of XYZ is \$50, which of the following would accomplish his goals? ()
A. Sell a call with a strike price of \$50.
B. Buy a call with a strike price of \$25.
C. Sell a put with a strike price of \$50.
D. Buy a put with a strike price of \$25.
33. Joe Brocato is currently following two stocks in the pharmaceutical industry: ABC and XYZ. He is bullish on ABC, but bearish on XYZ. ABC is currently priced at \$53.60 and XYZ is currently priced at \$9.80. He is considering an options strategy to capitalize on his expectations. Brocato gathers the following three months of data on put and call options for both stocks:

ABC:

call	strike	put
\$8.50	\$45.00	\$0.20
4.40	\$50.00	\$0.50
\$1.10	\$55.00	\$2.75

XYZ:

Call	Strike	Put
\$2.50	\$7.50	\$0.15
\$0.55	\$10.00	\$0.75
\$0.10	\$12.50	\$2.75

In three months, assume ABC has increased in price by \$1.00 while XYZ has dropped by \$1.67. Which of the following strategies would have been the most profitable in three months?

- A. Short the ABC put option with the \$45 strike price, and short the XYZ call option with the \$7.50 strike price.
 - B. Go long the ABC put option with the \$45 strike price, and go long the XYZ call option with the \$7.50 strike price.
 - C. Go long the ABC call option with the \$55 strike price, and go short the XYZ put option with the \$10 strike price.
 - D. Short the ABC call option with the \$55 strike price, and go long the XYZ put option with the \$10 strike price
34. Assume that a binomial interest-rate tree indicates a 6-month period spot rate of 2.5% and the price of the bond if rates decline is \$98.45, and if rates increase is \$96. The risk-neutral probabilities respectively associated with a decline and increase in rates if the market price of the bond is \$97 correspond to: ()
- A. 0.1/0.9
 - B. 0.9/0.1
 - C. 0.2/0.8
 - D. 0.8/0.2
35. The risk-free rate is 5% and the expected market risk premium is 10%. A portfolio manager is projecting a return of 12%. The portfolio has a beta of 0.7, and the market beta is 1.0. After adjusting for risk, this portfolio is expected to: ()
- A. Equal the performance predicted by the CAPM.
 - B. Outperform the CAPM return.
 - C. Underperform the CAPM return.
 - D. Unable to determine based on the information provided.
36. A portfolio manager of an endowment wants to compare the VAR estimates from the delta-normal method to the historical simulation method. The €100,000,000 portfolio is restricted from using derivative securities. The daily return is expected to be 0.0004, with a daily standard deviation of 0.0095. The manager uses a 2% level of significance that has a

- z-value of 2.05. The manager ranked the 250 daily returns from last year from highest to lowest, and reports the lowest six returns to be: -0.0191, -0.0259, -0.0311, -0.0354, -0.0368, and -0.0384. What is the daily VAR using the delta-normal method compared to the historical simulation method? ()
- A. The delta-normal method estimate is the same as that of the historical simulation method.
 - B. The delta-normal method estimated VAR is -€910,000.
 - C. The historical simulation method estimated VAR is -€2,590,000.
 - D. The historical simulation method estimated VAR is -€3,680,000.
37. A bank borrows USD5 million at 4.5%, purchases euros on the spot market, and lends that amount to a German firm at 6%. The euro spot rate is EUR1.12/USD. After one year, the exchange rate is EUR0.84/USD. The rate of return of this loan to the bank is closest to: ()
- A. 1.5%
 - B. 3.5%
 - C. 36.8%
 - D. 77.8%
38. The current spot price for cotton is \$0.325 per pound. The annual risk-free rate is 3.0%, and the cost to store and insure cotton is \$0.002 per pound per month. A 3-month futures contract for cotton is trading at \$0.3368 per pound. Is there an arbitrage opportunity available, and if so, how should an investor take advantage of it? ()
- A. There is no arbitrage opportunity available.
 - B. Yes; the investor should sell the futures contract, borrow at the risk-free rate, and buy the spot asset.
 - C. Yes; the investor should buy the futures contract, sell the spot asset, and lend at the risk-free rate.
 - D. Yes; the investor should buy the futures contract, borrow at the risk-free rate, and buy the spot asset.
39. If it is necessary to be long 2,500 deep-in-the-money call options in order to create a gamma neutral position, which of the following actions would best restore the original delta-neutral position after the addition of the options? ()
- A. Sell 1,250 shares of the underlying asset.
 - B. Buy 1,250 shares of the underlying asset.
 - C. Sell 2,500 shares of the underlying asset.
 - D. Buy 2,500 shares of die underlying asset
40. Downtown Savings (Downtown) is considering a loan to Fit Right Corporation (Fit Right). Fit Right has requested a credit facility of \$10 million of which \$2 million will be used immediately. The bank has assessed an internal credit rating of BBB+ equivalent to a 2% default probability over the next year. Draw down upon default is assumed to be 60%. The bank has additionally estimated a 40% recovery rate based on pledged collateral. The standard deviation of EDF and LGD is 5% and 30%, respectively. The closest estimate of the

- Downtown's adjusted exposure and unexpected loss is: ()
- A. Adjusted exposure of \$5,200,000 and unexpected loss of \$270,000.
 - B. Adjusted exposure of \$5,200,000 and unexpected loss of \$350,000.
 - C. Adjusted exposure of \$6,800,000 and unexpected loss of \$270,000.
 - D. Adjusted exposure of \$6,800,000 and unexpected loss of \$350,000.
41. A financial institution created a model to measure interest rate volatility. The historical distribution of interest rate volatility did not appear to be normally distributed due to the obvious large fat-tails. The firm is contemplating using a regime-switching volatility model to capture the apparent existence of time-varying high and low interest rate volatility. Which of the following statements best characterize the implementation of a regime-switching model for this firm?
- A. The interest rate distributions are conditionally normally distributed assuming static interest rate volatility
 - B. The assumption of normality is not appropriate in this case, and therefore, a regime-switching model is unlikely to work well
 - C. The probability of large deviations from normality occurring are more likely with a regime-switching model
 - D. The regime-switching model may resolve the fat-tail problem
42. Yasuo Hamanaka, the lead copper trader for Sumitomo, attempted to corner the copper market. Since the copper market was relatively small, Hamanaka had the potential to control and corner it. This trader did not use which of the following tactics to corner the copper market? ()
- I Establishing a long dominant position in physical copper.
 - II Establishing a short dominant position in copper futures.
- A. I only
 - B. II only
 - C. Both I and II
 - D. Neither I nor II
43. Early exercise of an option is more likely for which of the following types of options? ()
- A. European call options on stocks paying large dividends
 - B. American call options on stocks paying small dividends.
 - C. American call options close to maturity.
 - D. American put options on stocks paying large dividends.
44. An investor buys a stock for \$40 per share and simultaneously sells a call option on the stock with an exercise price of \$42 for a premium of \$3 per share. Ignoring dividends and transaction costs, which of the following amounts represents the maximum profit the writer of this covered call can earn if the position is held to expiration? ()
- A. \$1
 - B. \$2

- C. \$3
D. \$5
45. A bank has \$500 million in assets with a modified duration of 7 and \$400 million in liabilities with a modified duration of 5. Accounting only for duration effects, the impact of a 50-basis-point parallel upward shift in the yield curve on the bank's equity value is closest to a: ()
A. \$7.5 million decrease
B. \$7.5 million increase
C. \$15 million decrease
D. \$15 million increase
46. A data quality scorecard can be used to monitor the success of a data governance program. Data quality scores are created by using either base-level or complex metrics. Which of the following viewpoints regarding data quality scorecards is best described as using complex metrics to quantify the impact of each data quality problem?
A. Business impact view.
B. Business process view.
C. Data quality issues view
D. Data process issues view.
47. It is currently August 2010, and the spot price of soybeans is \$5.05/bushel. Storage costs for soybeans on a continuously compounded basis are \$0.45/bushel annually. The appropriate continuously compounded interest rate is 8%. If a soybean farmer has just finished harvesting his crop but would like to sell half of the crop in February 2011 and half in May 2011 by going short futures contracts, which of the following statements is most accurate? The farmer should store his crop only if the: ()
A. February futures contract price is at least \$5.48/bushel and the May futures contract price is at least \$5.70/bushel.
B. February futures contract price is at least \$5.48/bushel and the May futures contract price is at least \$5.73/bushel.
C. February futures contract price is at least \$5.50/bushel and the May futures contract price is at least \$5.70/bushel.
D. February futures contract price is at least \$5.50/bushel and the May futures contract price is at least \$5.73/bushel.
48. If a 91-day U.S. Treasury bill (T-bill) is priced at a discount of 6.8%, what will an investor actually pay for a \$10,000 bill at issuance? ()
A. \$9,320
B. \$9,828
C. \$9,830
D. \$9,832
49. Which of the following statements regarding market, credit, and operational risk is correct?

- ()
- A. People risk relates to the risk associated with incompetence and lack of suitable training of internal employees and/or external individuals.
- B. Between two counterparties, presettlement risk is always higher than settlement risk.
- C. Options are examples of financial instruments with non-directional risks.
- D. Funding liquidity risk results from a large position size forcing transactions to influence the price of securities
50. A large publicly held company refines crude oil into gasoline and sells gasoline wholesale with long-term contracts at fixed prices. The firm also owns the land, with full rights, from which it pumps crude oil. The firm financed the purchase of the land by issuing floating-rate bonds. This firm could reduce the volatility of its earnings by entering into a(n): ()
- I Interest-rate swap.
- II Oil commodity swap.
- A. I only
- B. II only
- C. Both I and II
- D. Neither I nor II
51. You are reviewing the performance of a portfolio and have compiled the following information.
- | | |
|---|--------|
| Average return over the last year | 13.75% |
| Benchmark average return over the last year | 12.36% |
| Standard deviation | 16.90% |
| Beta | 1.23 |
| Tracking error | 7.21% |
| Semi-standard deviation | 13.72% |
| Risk-free rate | 5.35% |
- In relation to the portfolio's performance, which of the following statements is correct?
- ()
- I The information ratio for the portfolio is 0.192.
- II The Sharpe ratio yields a result lower than the Sortino ratio but higher than the information ratio.
- A. I only
- B. II only
- C. Both I and II
- D. Neither I nor II
52. Long-Term Capital Management (LTCM) experienced financial difficulty in the late 1990s. Which of the following statements is false regarding their troubles? ()
- A. The amount of their positions in swaps was very large, but due to offsetting positions, the amount of their risk was in theory very small.
- B. LTCM required their investors to invest for three years, thereby increasing funding risk.
- C. LTCM obtained financing through repurchase agreements at very favorable terms.

- D. Due to the size of their positions, LTCM could not liquidate their assets without selling at large discounts.
53. Charmaine Townsend, FRM, has been managing a growth portfolio for her clients using a screening process that identifies companies that have high earnings growth rates, Townsend has decided that because of a volatile economy, she is going to adopt a value strategy using a screening process that identifies companies that have low price-earnings multiples. Townsend will violate the GARP Code of Conduct if she makes this change in her investment process without: ()
- A. Notifying her supervisor before she makes the change.
- B. Promptly notifying her clients of the change.
- C. Getting written permission from her clients in advance of the change.
- D. Getting prompt written acknowledgment of the change from her clients within a reasonable time after the change was made.
54. An options dealer sells equity call options. When sold, the options are at-the-money and the firm will be delta-neutral hedged. Which of the following statements is correct? ()
- I The options dealer will have a negative gamma and negative vega exposure.
- II Over time, gamma and vega will have less of an impact on the value of the option dealer's position if the option moves away from the money.
- A. I only
- B. II only
- C. Both I and II
- D. Neither I nor II
55. Which of the following statements is not a problem with multidimensional scenario analysis? ()
- A. Correlation of risk factors is ignored.
- B. Determining how many risk factors to include is non-trivial.
- C. Selecting a time period for parametric estimation is subjective.
- D. Assigning weights to various scenarios is very complex.
56. Your firm uses a proprietary forecasting model that requires parameter estimates of random variables that are believed to follow the Poisson distribution. You are attempting to assess the probability of the number of defects in an assembly production process for a given company. Assume that there is a 0.005 probability of a defect for every production run. What is the probability of 7 defects in 1,000 production runs? ()
- A. 3.0%
- B. 4.4%
- C. 8.6%
- D. 10.4%
57. You are analyzing a portfolio that has a Jensen's alpha of 4.75% and an actual return of 14.2%. The risk-free rate is 4.25% and the equity risk premium is 6%. Based on the information provided, the beta of the portfolio is closest to: ()

- A. 0.77
B. 0.87
C. 0.97
D. 1.07
58. An options trader is attempting to judge whether an option's premium is cheap or expensive using a GARCH(1, 1) model to forecast volatility. The intercept of the model has a value of 0.000008, the latest estimate of variance is 0.78, and the parameter estimate on the latest innovation is 0.16. If the latest volatility estimate from the model was 2.6% per day and the option's underlying asset value changed by 3.4%, the trader's estimate of the next period's standard deviation is closest to: ()
- A. 0.03%
B. 0.07%
C. 2.68%
D. 3.38%
59. An investor is about to deliver a short bond position and has four options to choose from as listed below. The settlement price is \$91.50. Based on the information provided, which of the four bonds is the cheapest to deliver? ()
- | Bond | Quoted Price | Conversion Factor |
|------|--------------|-------------------|
| 1 | 98 | 1.02 |
| 2 | 122 | 1.27 |
| 3 | 105 | 1.08 |
| 4 | 112 | 1.15 |
- A. Bond 1
B. Bond 2
C. Bond 3
D. Bond 4
60. A bond portfolio consists of bonds with various maturities. The portfolio manager expects the yield curve to become steeper. In that case, which of the following statements is correct? ()
- A. A strip hedge will be a more effective hedge than a stack hedge.
B. A stack hedge will be a more effective hedge than a strip hedge.
C. A cross-hedge will be more effective than an immunization hedge.
D. An immunization hedge will be more effective than a cross-hedge.
61. Stampede Capital Management has entered into a currency swap with Polar Investments in which Stampede pays 3.5% per annum in euros and receives 2.8% per annum in dollars. Stampede pays a principal amount of \$130 million to Polar, while Polar pays €100 million to Stampede at inception of the swap. The yield curve in both Germany and the United States is upward-sloping with the following interest rates:

	1-Year	2-Year
Germany	4.00%	4.50%
United States	2.00%	2.25%

The swap will last for another two years and the current exchange rate is \$1.33/€. What is the value of the currency swap to Stampede? ()

- A. \$0.21 million.
- B. \$0.54 million
- C. \$1.06 million
- D. \$1.95 million

62. As research analyst at his firm, Richard Starr is assigned the task of examining the relevance of the capital asset pricing model by running hypothesis tests on the risk-free rate and the market risk premium. Starr's supervisor makes the following statement: "For the CAPM to be valid, the mean 1-year Treasury bill rate should equal 4% and the mean market risk premium should be positive." Starr collects historical rate of return data for 1-year Treasury bills and for the annual market risk premiums over the past 30 years. He then conducts tests of hypotheses using the historical Treasury bill and market risk premium data. To examine the claims of his supervisor, identify whether Starr should perform one-tailed or two-tailed tests of these hypotheses. ()

Risk-free rate hypothesis

Market risk premium hypothesis

- | | |
|--------------------|-----------------|
| A. One-tailed test | One-tailed test |
| B. One-tailed test | Two-tailed test |
| C. Two-tailed test | One-tailed test |
| D. Two-tailed test | Two-tailed test |

63. An analyst at Bergman International Bank has been asked to explain the calculation of VAR for linear derivatives to the newly hired junior analysts. Which of the following statements best describes the calculation of VAR for a linear derivative on the S&P 500 Index? ()

- A. For a futures contract, multiply the VAR of the S&P 500 Index by a sensitivity factor reflecting the percent change in the value of the futures contract for a 1% change in the index value.
- B. For an options contract, multiply the VAR of the S&P 500 Index by a sensitivity factor reflecting the percent change in the value of the futures contract for a 1% change in the index value.
- C. For a futures contract, divide the VAR of the S&P 500 Index by a sensitivity factor reflecting the absolute change in the value of the futures contract per absolute change in the index value.
- D. For an options contract, divide the VAR of the S&P 500 Index by a sensitivity factor reflecting the percent change in the value of the futures contract for a 1% change in the index value.

64. An analyst is conducting a two-tailed z -test to determine if small cap returns are significantly different from 10%. The sample size is 200 and the computed z -statistic is 2.3. Using a 5% level of significance, which of the following statements is most accurate? ()

- A. Reject the null hypothesis and conclude that small cap returns are not significantly different from 10%.
- B. Fail to reject the null hypothesis and conclude that small cap returns are significantly different from 10%.
- C. Fail to reject the null hypothesis and conclude that small cap returns are close enough to 10% that we cannot say they are significantly different from 10%.
- D. Reject the null hypothesis and conclude that small cap returns are significantly different from 10%.
65. Given the information in the table below and given that the 2-year spot rate is 10.263%, what is the appropriate action of an arbitrageur? Assume annual coupons and compounding.

	Bond A	Bond B	Bond C
Maturity in years	1	2	2
Coupon rate	0%	0%	10%
Price	95.2381	82.6446	100

- A. The arbitrageur should short the 1-and 2-year zero-coupon bonds and buy the 2-year coupon bond.
- B. The arbitrageur should buy the 1-and 2-year zero-coupon bonds and short the 2-year coupon bond.
- C. The arbitrageur should buy the 1-year zero-coupon and 2-year coupon bond and short the 2-year zero-coupon bond.
- D. The arbitrageur should short the 1-year zero-coupon and 2-year coupon bond and buy the 2-year zero-coupon bond.
66. Greg Barns, FRM, and Jill Tillman, FRM, are discussing the hypothesis they wish to test with respect to the model represented by $Y_i = B_0 + B_1 \times X_i + \epsilon_i$. They wish to use the standard statistical methodology in their test. Barns thinks an appropriate hypothesis would be that $B_1 = 0$ with the goal of proving it to be true. Tillman thinks an appropriate hypothesis to test is $B_1 = 1$ with the goal of rejecting it. With respect to these hypotheses: ()
- A. The hypothesis of neither researcher is appropriate.
- B. The hypothesis of Barns is appropriate but not that of Tillman.
- C. The hypothesis of Tillman is appropriate but not that of Barns.
- D. More information is required before a hypothesis can be set up.
67. The current price of a stock is \$25. A call option is available with a \$20 strike price that expires in three months. If the underlying stock exhibits an annual standard deviation of 25%, the current risk-free rate is 4.5%, $N(d_1) = 0.9737$, and $N(d_2) = 0.9652$, the Black-Scholes-Merton value of the call is closest to: ()
- A. \$4.39
- B. \$4.87
- C. \$5.25

- D. \$5.89
68. Capital Returns, LLC, (Capital) is a hedge fund corporation that frequently enters positions to reduce default risk. Capital has entered a derivatives contract with a third party that has a AAA rating. Capital only enters into positions with third parties with AAA ratings to eliminate the high cost of analyzing them. Which of the following items is least likely to be a concern of Capital?
- Counterparty credit risk.
 - Decreased correlations in market downturns.
 - Expanding in areas where risk is not accounted for.
 - Failure to discover all risks.
69. An investor buys a December 2010 put of XYZ limited with a strike of USD 65 for USD 5, and sells a December 2010 put of XYZ limited with a strike of USD 50 for USD 3. Which of the following pairs represents the type of option strategy and the maximum profit of the strategy, respectively? ()
- | <u>Option strategy</u> | <u>Maximum profit</u> |
|------------------------|-----------------------|
| A. Bull spread | USD 15 |
| B. Bear spread | USD 15 |
| C. Bull spread | USD 13 |
| D. Bear spread | USD 13 |
70. Jeff Spider, FRM, is a consultant for SPA Consulting. He has been engaged by Limbo Company to select an equity investment manager for their defined benefit pension plan. Spider is considering Cutter Investments. The money management firm's 10 year performance is as follows: 35.1%, 15.6%, 12.0%, 22.2%, 50.3%, -20.0%, -33.4%, -30.6%, 30.8%, 13.0%. From the data provided, Spider calculated the following statistics: ()
- Mean 9.5%
 - Median 14.3%
 - Excess kurtosis -0.9761
- Indicate whether the returns distribution is positively or negatively skewed and whether the returns distribution is leptokurtic or platykurtic.
- | <u>Skewed</u> | <u>Kurtosis</u> |
|---------------|-----------------|
| A. Positively | Leptokurtic |
| B. Negatively | Platykurtic |
| C. Positively | Platykurtic |
| D. Negatively | Leptokurtic |
71. Assume you take a short position in a March T-bond futures contract and that the settlement price of the cheapest-to-deliver (CTD) bond in March will be 70. Also, assume that the conversion factor is equal to 1.3. You plan on delivering the bond's coupon payments in May and November. If the accrued interest from November to March is equal to \$1,500, what is the invoice price of this bond (face value = 100,000)? ()

- A. \$91,000.
- B. \$92,500.
- C. \$55,346.
- D. \$71,500.

72. Which sequence of the commodities X, Y, and Z correctly identifies appropriate examples in terms of production, demand, and relative storage costs to other commodities? ()

Commodities	X	Y	Z
Production	Constant	Seasonal	Constant
Demand	Relatively constant	Constant	Seasonal
Storage costs	Relatively moderate	Moderate	Expensive

- | | X | Y | Z |
|----|-------------|-------------|-------------|
| A. | Oil | Corn | Natural gas |
| B. | Natural gas | Oil | Corn |
| C. | Corn | Natural gas | Oil |
| D. | Natural gas | Oil | Corn |

73. If you hedge a portfolio with a futures contract that has twice the standard deviation of its benchmark and a correlation of 0.5, the optimal hedge ratio is closest to: ()

- A. 0.25
- B. 0.50
- C. 1.00
- D. 2.00

74. Given the following 1-year transition matrix, what is the probability that a Baa-rated firm will default over a 2-year period? ()

Rating from	Rating to			
	Aaa	Baa	Caa	Default
Aaa	90%	10%	0%	0%
Baa	10%	80%	5%	5%
Caa	1%	4%	80%	15%

- A. 5.00%
- B. 9.75%
- C. 14.50%
- D. 20.00%

75. Which of the following pairs represent the correct effects on expected loss from increasing both loss given default (LGD) and draw down? ()

- | | <u>LGD</u> | <u>Draw down</u> |
|----|------------|------------------|
| A. | Increase | Increase |
| B. | No effect | Increase |

- C. Increase No effect
D. No effect No effect
76. A 1-year American put option with an exercise price of \$40 will be worth \$10.00 at maturity with a probability of 0.25 and \$0.00 with a probability of 0.75. The current stock price is \$36. The discount rate is 5%. The optimal strategy is to: ()
- A. Exercise the option because the payoff from exercise exceeds the present value of the expected future payoff.
B. Not exercise the option because the payoff from exercise is less than the discounted present value of the future payoff.
C. Exercise the option because it is currently at-the-money.
D. Not exercise the option because it is out-of-the-money.
77. The 3-month Eurodollar futures contract trades on the Chicago Mercantile Exchange (CME) and is the most popular interest rate futures in the United States. This contract settles in cash, and the minimum price change is one “tick” which is a price change of one basis point, or \$25 per \$1 million contract. If the quoted price for the June 2009 Eurodollar futures contract is 96.89, the value of one contract is closest to: ()
- A. \$968,900
B. \$970,000
C. \$984,450
D. \$992,225
78. Which of the following statements regarding foreign exchange risk is correct? ()
- I. A bank with a negative net exposure in a currency position is net short the currency.
II. On-balance-sheet hedging is achieved when a financial institution has a matched maturity and currency foreign asset-liability book.
- A. I only
B. II only
C. Both I and II
D. Neither I nor II
79. Borough Corporation has selected a single risk metric to target in its risk management process. Steve Roland, FRM, and Bill Pound, FRM, are discussing the implications of the choice. Roland says that having a single quantifiable risk metric is generally accepted as necessary in risk management. Pound says that the metric should be augmented with scenario analysis to account for crises and the human element of the market. With respect to these statements: ()
- A. Both Roland and Pound are incorrect.
B. Both Pound and Roland are correct
C. Roland is correct and Pound is incorrect
D. Pound is correct and Roland is incorrect
80. The annual returns for a portfolio are normally distributed with an expected value of £50

million and a standard deviation of £25 million. Which of the following amounts is closest to the probability that the value of the portfolio one year from today will be between £91.13 million and £108.25 million? ()

- A. 0.025
- B. 0.040
- C. 0.075
- D. 0.090

81. The Basel Committee on Banking Supervision has written stress testing principles for banks related to supervision. How many of the following statements are most likely correct regarding recommendations to supervisors?

- I. Supervisors should make annual comprehensive assessments of a bank's stress testing procedures.
- II. It is necessary for supervisors to question the use of stress tests that produce unrealistic results or are inconsistent with a bank's risk appetite.
- III. It is prudent for supervisors to conduct additional stress tests using common scenarios within a bank's jurisdiction.
- IV. For a robust analysis, supervisors should utilize capital ratios in their assessment of capital adequacy and determine the mobility of capital across business lines.

- A. 1
- B. 2
- C. 3
- D. 4

82. An analyst gathered the following data about three stocks:

Stock	Beta	Estimated Return
A	1.5	15.0%
B	1.1	15.7%
C	0.6	14.2%

If the risk-free rate is 8% and the risk-premium on the market is 7%, are Stock A and Stock C undervalued, properly valued, or overvalued, according to the security market line (SML)? ()

- | | <u>Stock A</u> | <u>Stock C</u> |
|----|----------------|----------------|
| A. | Undervalued | Undervalued |
| B. | Overvalued | Overvalued |
| C. | Undervalued | Overvalued |
| D. | Overvalued | Undervalued |

83. You are using linear regression to analyze the relationship between a stock's returns and an industry index. The regression provides the following results.

Coefficient	Standard Error
-------------	----------------

Intercept	3.8	2.25
Industry Index	2.2	0.58
	Sum of Squares	
Residual	272.49	
Total	1,264.72	

Assume that the sample uses ten years of quarterly observations.

Based on the information provided, which of the following statements is incorrect? ()

- A. The industry index is significant at the 99% level.
- B. The correlation coefficient between the stock and the industry index is 0.89.
- C. The intercept is significant at the 95% level.
- D. There are a total of 40 observations in the sample.

84. Based on the information provided, which of the following amounts are closest to the 2-year spot rate and the forward rate in 1.5 years (ending in year 2), respectively? ()

Maturity	STRIPS Price	Spot Rate	Forward Rate
0.5 years	98.7654	2.50%	2.50%
1.0 years	97.0662	3.00%	3.50%
1.5 years	95.2652	3.26%	3.78%
2.0 years	93.2775	?	?

2-year spot rate 1.5-year forward rate

- A. 1.755% 4.26%
- B. 3.510% 4.06%
- C. 1.755% 4.06%
- D. 3.510% 4.26%

85. Goodeal, Inc., is considering the purchase of a new material handling system for a cost of \$15 million. This system is expected to generate a positive cash flow of \$1.8 million per year in perpetuity. What is the NPV of the proposed investment if the appropriate discount rate is 10.5%?

- A. \$2,142,857.
- B. \$13,200,000.
- C. \$16,800,000.
- D. \$17,142,857.

86. The S&P 500 Index is trading at 1,025. The S&P 500 pays an expected dividend yield of 1.2%, the current risk-free rate of interest is 2.75%, and the prevailing market rate of interest is 4.25%. The value of a 3-month futures contract on the S&P 500 Index is closest to: ()

- A. 1,028.98
- B. 1,032.85
- C. 1,035.17
- D. 1,041.01

87. Adam Farman has been asked to estimate the volatility of a technology stock index. He has identified a statistic which has an expected value equal to the population volatility and has determined that increasing his sample size will decrease the sampling error for this statistic. His statistic can best be described as: ()
- A. Unbiased and efficient
 - B. Unbiased and consistent
 - C. Efficient and consistent
 - D. Unbiased only
88. You calculate hedge positions for foreign currency exposures based on delta exposures. If your firm has significant nonlinear exposures to changes in exchange rates, which of the following statements is least correct? ()
- A. A dynamic hedge may be required
 - B. The delta of a forward contract position is equal to one.
 - C. Delta approximations will be less precise for large changes in risk factors.
 - D. Delta exposures will change as exchange rates change.
89. Consider a \$1,000-face value, 12-year, 8%, semiannual coupon bond with a YTM of 10.45%. The change in value for a decrease in yield of 38 basis points is closest to: ()
- A. Increase of \$22.76
 - B. Decrease of \$22.76
 - C. Increase of \$23.06
 - D. Decrease of \$23.06
90. The market portfolio (M) contains the optimal allocation of only risky assets and no risk-free assets. Let the S_1 be the Sharpe ratio of this market portfolio. There exists a risk-free asset. Initially, an investor is fully (100%) invested in M with a portfolio Sharpe ratio of S_1 . Subsequently, the investor borrows 30% at the risk-free rate, such that she is 130% invested in the market portfolio (M) where this leverage portfolio has a Sharpe ratio of S_2 . After the leverage (i.e., borrowing at the risk-free rate to invest +30% in M), is the investor still on the efficient frontier and how do the Sharpe ratios?
- A. No (no longer efficient), and $S_2 < S_1$
 - B. No, but $S_2 = S_1$
 - C. Yes (still efficient), but $S_2 < S_1$
 - D. Yes and $S_2 = S_1$
91. A portfolio, invested in two assets with equal weights, has a volatility of 11.18% when the covariance (and correlation) between the asset returns is zero. If the covariance increases from zero to 0.0160, while the weights and individual asset volatilities remain unchanged, what is the change to portfolio volatility?
- A. Increase by 3.14%
 - B. Increase by 6.29%
 - C. Increase by 12.65%

- D. Not enough information
92. The current estimate of daily volatility is 1.5%. The closing price of an asset yesterday was \$30.00. The closing price of the asset today is \$30.50. Using the EWMA model (with $\lambda = 0.94$), the updated estimate of volatility is:
- A. 1.5096%
 - B. 1.5085%
 - C. 1.5092%
 - D. 1.5083%
93. Bonds issued by the XYZ Corp. are currently callable at par value and trade close to par. The bonds mature in 8 years and have a coupon of 8%. The yield on the XYZ bonds is 175 basis points over 8-year US Treasury securities, and the Treasury spot yield curve has a normal, rising shape. If the yield on bonds comparable to the XYZ bond decreases sharply, the XYZ bonds will most likely exhibit:
- A. Negative convexity
 - B. Increasing modified duration
 - C. Increasing effective duration
 - D. Positive convexity
94. Portfolio manager Sally has a position in 100 option contracts with the following position greeks: $\theta = +25,000$; $\nu = +330,000$ and $\gamma = -200$; ie., positive theta, positive vega and negative gamma. Which of the following additional trades, utilizing generally at-the-money(ATM) options, will neutralize(hedge) the portfolio with respect to theta, vega and gamma?
- A. Sell short-term options+sell long-term options (all roughly at-the-money)
 - B. Sell short-term options+ buy long-term options (~ ATM)
 - C. Buy short-term options+ sell long-term options (~ ATM)
 - D. Buy short-term options+ buy long-term options (~ ATM)
95. which option combination most closely simulates the economics of a short position in a futures contract?
- A. Payoff of a long call plus a short put
 - B. Profit of a long call plus a short put
 - C. Payoff of a long put plus short call
 - D. Profit of long put plus short call
96. Assume you enter into 5 long futures contracts to buy July gold for \$1,400 per ounce. A gold futures contract size is 100 troy ounces. The initial margin is \$14,000 per contract and the maintenance margin is 75% of the initial margin. What change in the futures price of gold will lead to a margin call?
- A. \$35 drop
 - B. \$70 drop
 - C. \$175 drop

- D. \$350 drop
97. Which of the following is TRUE about a contango/backwardation futures market?
- A futures market is either contango or backwardation but cannot be a mixture
 - The roll return (roll yield) is profitable to a long futures position during a backwardation futures market
 - A falling futures price necessarily implies backwardation
 - Gold must always be a contango market (assuming positive interest rates) because it has storage cost but does not pay a dividend
98. A sample has the following characteristics
- The mean of the sample is 2.5%.
 - Standard deviation is 1.5%.
 - 400 observations in the sample.
- Which is the standard error of the mean estimate?
- 0.125%
 - 0.088%
 - 0.053%
 - 0.075%
99. On a multiple choice exam with four choices for each of six questions, what is the probability that a student gets less than two questions correct simply by guessing?
- 0.46%
 - 23.73%
 - 35.60%
 - 53.39%
100. A factor analysis of the dividend-adjusted returns of ABC Ltd.'s stock price was undertaken to determine which economic factors contributed to its performance. The regression was performed on 460 observations. The results are as follows:

Table 1:

Predictor	Coefficient	Standard Error of coefficient
Intercept	-0.0243	0.005772
All share index	0.0256	0.017655
Industrial index	0.0469	0.006398
Financial index	0.0012	0.001412

Table 2:

Sum of Squared Regression (SSR)	12,466.47
Sum of Squared Errors (SSE)	1,013.22
Sum of Squared Total (SST)	13,479.69

Which one of the following options correctly describes which variables are significant at the 5% level, and the R^2 statistic, respectively?

Significant Variables at 5% level	R ² statistic
A. Intercept; Industrial index	0.924834
B. Intercept; Industrial index	0.075166
C. All share index; Industrial Index	0.924834
D. All share index; Industrial Index	0.075166