


**Question #1 of 100**

Question ID: 1261564

An analyst runs a regression of monthly stock returns on four independent variables over 48 months. From the regression, the total sum of squares (TSS) is computed as 580, and the residual sum of squares (RSS) is 220. The regression coefficient of determination ( $R^2$ ) and the adjusted  $R^2$  are closest to:

- |    | $R^2$ | Adjusted $R^2$  |
|----|-------|---|
| A) | 62%   | 58.5%  |
| B) | 38%   | 41.5%   |
| C) | 62%   | 41.5%   |
| D) | 38%   | 58.5%   |

**Explanation**

$$R^2 = (580 - 220) / 580 = 0.62 = 62\%$$

$$\begin{aligned} \text{adjusted } R^2 &= 1 - \left\{ \left[ \frac{(48 - 1)}{(48 - 4 - 1)} \right] \times (1 - 0.62) \right\} \\ &= 1 - (1.093 \times 0.38) = 0.585 = 58.5\% \end{aligned}$$

(Book 2, Module 19.2, LO 19.c)

---


**Question #2 of 100**

Question ID: 1512577

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.

**Explanation**

To obtain the  $d(1.0)$  discount factor, first solve for  $d(0.5)$ . In the equation below, the price for Bond A is equated to its terminal cash flow in six months, which is the principal plus the semiannual coupon of \$3.00.

$$101.182 = 103.00 \times d(0.5)$$

$$d(0.5) = 0.9823$$

Next use the price and cash flows of Bond B to calculate the  $d(1.0)$  discount factor. The cash flow in six months is the semiannual coupon of \$6.00 and is discounted by  $d(0.5)$ . The cash flow in one year is the principal plus the semiannual coupon of \$6.00.

$$102.341 = 6.00 \times d(0.5) + 106.00 \times d(1.0)$$

$$102.341 = 6.00 \times 0.9823 + 106.00 \times d(1.0)$$

$$d(1.0) = 0.9099$$


(Book 4, Module 56.2, LO 56.b)

---

### Question #3 of 100

Question ID: 1512549

Which of the following option strategies is an example of a bull spread?

- A) Buying a call option with a strike price of \$50 and selling a call option with a strike price of \$40.
- B) Buying a put option with a strike price of \$40 and selling a put option with a strike price of \$50. 
- C) Buying a put option with a strike price of \$50 and selling a put option with a strike price of \$40.
- D) Buying a put option with a strike price of \$50 and selling a call option with a strike price of \$40.

#### Explanation

A bull put spread is an options strategy used when the investor expects a moderate rise in the price of the underlying asset. This strategy is constructed by purchasing one put option with a lower exercise price while simultaneously selling another put option with a higher strike price. The goal of this strategy is realized when the price of the underlying stays above the higher strike price, which causes the short option to expire worthless, resulting in the trader keeping the premium. Note that buying a call with a higher strike price and selling a call with a lower strike price is a bear call spread that allows the investor to keep the net premium if stock prices fall. Buying a put with a high exercise price and selling a put with a low exercise price is an example of a bear put spread. Buying a put and selling a call will provide downside protection (due to the put), but the short call exposes the investor to unlimited risk if prices rise.


(Book 3, Module 40.2, LO 40.c)

---

### Question #4 of 100

Question ID: 1261539

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 downside 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. 

**Explanation**

$$\text{Sharpe ratio} = [E(R_p) - R_f] / \sigma$$

$$(2.5 - 3.5) / 21 = -0.0476$$

$$\text{Sortino ratio} = [E(R_p) - R_{\min}] / (\text{downside deviation})$$

$$(2.5 - 3.5) / 16 = -0.0625$$


The difference between these two ratios is:  $-0.0625 - (-0.0476) = -0.0149$ .

(Book 1, Module 5.3, LO 5.g)

**Question #5 of 100**

Question ID: 1261560

An investment analyst calculated the intrinsic value of RTN Company and expects the stock to generate a 25% annual return over the foreseeable future. However, the analyst 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 the analyst and state the correct rejection region.

- |    | <u>Significance level</u>                          | <u>Rejection region</u>   |
|----|--|---|
| A) | Reject a true null hypothesis<br>5% of the time.   | $z > 1.645$  |
| B) | Reject a false null hypothesis<br>95% of the time. | $z < -1.645$  |
| C) | Reject a true null hypothesis<br>5% of the time.   | $z < -1.645$  |
| D) | Reject a false null hypothesis<br>95% of the time. | $z > 1.645$   |

**Explanation**

The level of significance is the probability of rejecting the null hypothesis when it is true. The null hypothesis will be rejected if the z-statistic is greater than 1.645.


(Book 2, Module 17.2, LO 17.f)

### Question #6 of 100

Question ID: 1512552

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) 94.58.
- B) 98.85.
- C) 101.15.
- D) 103.03. 

#### Explanation

To compute the price of the bond, discount each cash flow back to the present at the appropriate spot rates. \$1.75 is the coupon payment per period. Period 3 pays principal plus coupon of \$101.75. The first payment computation is as follows:

$$N = 1$$

$$I = 2.2\% / 2 = 1.1\%$$

$$FV = 1.75$$

Solve for PV → 1.73

Maturity (Years)	Spot Rate (%)	PV
0.5	2.20%	1.73
1.0	2.25%	1.71
1.5	2.30%	1.69
2.0	2.35%	1.67
2.5	2.40%	1.65
3.0	2.45%	94.58
<b>Bond price:</b>		<b>103.03</b>


(Book 3, Module 42.2, LO 42.d)

---

**Question #7 of 100**

Question ID: 1512537

A futures trader enters a short position in a May wheat futures contract at USD 4.98 a bushel. The price of the previous day's May contract was USD 4.95. Each contract controls 5,000 bushels of wheat and has a daily price limit of \$0.20. The initial margin is \$2,500 and the maintenance margin is \$1,800. During the day, a dramatic change in the weather caused large moves in the price of wheat futures and the contract closed the day limit up (i.e., the contract moved up by its daily price limit, or up \$0.20 from the previous day). How much variation margin does the trader need to deposit in her account?

- A) No deposit is needed because the contract closed limit up.
- B) \$150.
- C) \$850. 
- D) \$1,000.

**Explanation**

We can infer from this information that the contract closed up \$0.20 from the previous day's close of \$4.95, or \$5.15. The trader's short position loses as the price rises, so her loss is  $(\$5.15 - \$4.98) \times 5,000 = \$850$ . Her margin account will change as follows:  $\$2,500 - \$850 = \$1,650$ . Since the balance has fallen below the maintenance margin level, she must make a variation margin payment of \$850 in order to bring the account up to the initial margin level.


(Book 3, Module 33.2, LO 33.c)

---

**Question #8 of 100**

Question ID: 1261545

The risk aggregation process includes breaking down, sorting, and merging data and datasets. Several benefits accrue to banks that have effective risk data aggregation and reporting systems in place. Which of the following statements do not describe a benefit of effective risk data aggregation?

- A) Improved resolvability in the event of bank stress or failure.
- B) The bank is better able to increase efficiency, reduce the chance of loss, and ultimately increase profitability.
- C) It is easier to see problems on the horizon when risks are viewed individually rather than as a whole. 
- D) The bank is better able to make strategic decisions.

**Explanation**

Several benefits accrue to banks that have effective risk data aggregation and reporting systems in place. These benefits include:

- An increased ability to anticipate problems. Aggregated data allows risk managers to understand risks holistically. It is easier to see problems on the horizon when risks are viewed as a whole rather than in isolation.
- In times of financial stress, effective risk data aggregation enhances a bank's ability to identify routes to return to financial health.
- Improved resolvability in the event of bank stress or failure.
- By strengthening a bank's risk function, the bank is better able to make strategic decisions, increase efficiency, reduce the chance of loss, and ultimately increase profitability.


(Book 1, Module 7.1, LO 7.a)

---

**Question #9 of 100**

Question ID: 1371790

ESG Product'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 

**Explanation**

Standard deviation =  $\sqrt{160,000} = 400$ ;  $400/\sqrt{100} = 40$ . The researcher is correct that a possible consequence of increasing the sample size is sampling more than one population. In addition, increasing sample size will increase its costs. The need for additional precision must be balanced with cost and the risk of sampling more than one population.


(Book 2, Module 17.1, LO 17.a)

---

**Question #10 of 100**

Question ID: 1512564

Baker Ltd. offers its new employees a one-day training session that covers all aspects of enterprise risk, including financial risk. For the training, a risk manager has been asked by his supervisor to develop a presentation covering coherent risk measures. The first slide developed lists the four risk measures, along with a brief description for each measure. Which of the following descriptions accurately describes the defined risk measure?

- A) Monotonicity implies that more risk is likely for portfolios with greater future returns.
- B) Translation invariance states that adding sure amounts to a portfolio has a minimal impact to overall risk.
- C) Subadditivity defines a risk ceiling for a portfolio, as overall portfolio risk cannot exceed the risk of its individual assets. 
- D) Positive homogeneity requires that assets contained within a portfolio should have positive correlations to minimize risk.

#### Explanation

The subadditivity risk measure can be thought of as a portfolio broken out into smaller subportfolios with individual risk profiles. Summing the risks of the individual subportfolios will always produce a total that is at least equal to the overall risk of the portfolio, and will likely be greater than overall portfolio risk due to the benefits of diversification. Monotonicity implies less (rather than more) risk is likely for portfolios with greater future returns. Translation invariance implies that adding sure amounts to a portfolio will have a positive impact on reducing overall risk. Positive homogeneity implies that the risk of a position is proportional to its size.

(Book 4, Module 47.2, LO 47.e)

---


#### Question #11 of 100

Question ID: 1512589

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.

#### Explanation

The delta of a call option with a continuous dividend yield is given by the following formula:

$$\text{Delta} = N(d_1) \times e^{-qT}$$

where:

q = continuous dividend yield

T = time to maturity

So, Delta =  $0.7 \times e^{-0.02 \times 3} = 0.66$ .


(Book 4, Module 62.2, LO 62.d)

---

### Question #12 of 100

Question ID: 1512539

A portfolio manager runs a large \$400,000,000 long equity portfolio. Relative to the S&P 500, the manager's portfolio has a beta of 1.07. Currently, S&P futures are trading at 4,000, and the futures multiplier is 250. The manager wishes to create a hedge for his portfolio for the next four months using S&P futures. How many futures contracts should the manager 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; 428 contracts. 

#### Explanation

Since the manager is long equities, a short hedge is appropriate. He should sell the following amount of S&P futures contracts:

$$1.07 \times \frac{400,000,000}{4,000 \times 250} = 428 \text{ contracts}$$


(Book 3, Module 34.1, LO 34.e)

---

### Question #13 of 100

Question ID: 1512558

A fund manager holds 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 104.40625 with a duration of eight and a contract size of \$100,000. Which of the following actions should the fund manager 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.

**Explanation**

Since the fund manager is long the portfolio, the appropriate strategy is to short the futures.  $N = -(75,000,000 \times 9) / (104,406.25 \times 8) = -808.14$ . Rounding up to the nearest whole number means that the fund manager should short 809 futures contracts.


(Book 3, Module 45.3, LO 45.j)

---

**Question #14 of 100**

Question ID: 1512571

Country risk analysis involves seeing what the world will look like in the future, not what it looks like today. Many countries are suffering from massive amounts of debt and political upheaval. As such, there are basic procedures that rating agencies follow when undertaking country risk analysis. Which of the following statements is most likely incorrect regarding how rating agencies measure sovereign default risk? The ratings process includes:

- A)** Sovereign default risk is multifaceted and must be analyzed from many perspectives.
- B)** A local currency rating is usually worse than a country's corresponding foreign currency rating. 
- C)** Sovereign ratings may change across time but change much less frequently than corporate bond ratings.
- D)** The trustworthiness of the government and the nature of the economy must also be considered when evaluating sovereign default risk.

**Explanation**

A country's local currency rating is generally equal to or better than the foreign currency rating because some countries are able to simply print more money to meet obligations.

(Book 4, Module 51.2, LO 51.e)

---


**Question #15 of 100**

Question ID: 1357814

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. There is also a 37.5% chance that ABC stock will rise in price. Given that ABC stock has risen in price, what is the probability the economy has grown? Assume that the probability that ABC stock is up given that the economy grows is 0.60.

- A)** 30%.
- B)** 50%.

C) 70%.

D) 80% 

**Explanation**

We are looking to find  $P(G|U)$ , the probability the economy grows given that ABC stock is up.

$P(G)$  = probability the economy grows = 0.50

$P(R)$  = probability of a recession = 0.50

$P(U)$  = probability the stock is up = 0.375

Using Bayes' formula:

$P(G|U) = P(G) \times P(U|G) / P(U)$

$P(G|U) = (0.50) \times (0.60) / 0.375$

$P(G|U) = 0.3 / 0.375 = 0.8 = 80.0\%$

(Book 2, Module 12.2, LO 12.g)

---

**Question #16 of 100**

Question ID: 1512546

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%?

	<u>American</u>	<u>European</u>
A) \$6.00	\$6.00	\$6.00
B) \$5.96	\$6.00	\$6.00
C) \$6.00	\$6.59	\$6.59
D) \$6.59	\$6.59	\$6.59 

**Explanation**

The minimum value for a European-style call option,  $c_T$ , is given by:

$$\max[0, S_T - X / (1 + R_F)^T] = \max[0, 86 - 80 / (1.03)^{3/12}] = \$6.59$$

An American-style call option must be worth at least as much as an otherwise identical European-style call option and has the same minimum value. Note that this fact alone limits the possible correct responses to Choices A and D. Since the American-style call is in-the-money and therefore must be worth more than the \$6 difference between the strike price and the exercise price, you can eliminate Choice A and select Choice D without calculating the exact minimum value.


(Book 3, Module 39.2, LO 39.d)

---

**Question #17 of 100**

Question ID: 1261550

An investment advisor specializes in selling municipal bonds and 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. The advisor tells her prospective clients that the bonds are safe, secure, and offer generous interest payments. Which of the following statements is most correct regarding the investment advisor's actions? The advisor:

- A) did not violate the GARP Code of Conduct because municipal bonds are generally regarded as being safe investments.
- B) violated the part of the GARP Code of Conduct dealing with confidentiality.
- C) violated the GARP Code of Conduct when she misrepresented the bonds by not explaining their inherent risks. 
- D) has not violated any of the ethical responsibilities related to the GARP Code of Conduct.

**Explanation**

The investment advisor violated the Professional Integrity and Ethical Conduct section of the Code of Conduct by misrepresenting the bonds as being safe and secure when in fact they were investing in risky projects and backed only by the revenue generated from those projects. According to the Code, GARP Members shall not knowingly misrepresent details relating to analysis, recommendations, actions, or other professional activities.

(Book 1, Module 11.1, LO 11.a)

---

**Question #18 of 100**

Question ID: 1512562

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.

**Explanation**

The daily delta-normal VaR is calculated as  $[R_p - (z)(\sigma)](\text{value of portfolio})$ , where  $R_p$  is the expected return on the portfolio,  $z$  is the  $z$ -value corresponding to the desired level of significance, and  $\sigma$  is the standard deviation. Annual VaR =  $[0.1 - (2.33 \times 0.15)] \times 10,000,000 = -\text{€}2,495,000$ . In order to convert annual VaR to daily VaR, we need to scale the standard deviation by the square root of time and the mean by 250 trading days. VaR =  $\{0.1 / 250 - [(2.33 \times 0.15) / 250^{(1/2)}]\} \times 10,000,000 = -\text{€}217,043$ .

(Book 4, Module 47.1, LO 47.a)

---

### Question #19 of 100

Question ID: 1261543


Using an arbitrage pricing theory (APT) model, what is the expected return for a stock given the following factor betas and factor exposures? Assume the risk-free rate is equal to 2%.

Factor betas:

- Standardized probability of default: 0.5.
- Standardized average daily trading volume: -0.2.
- Standardized average earnings growth forecast: 1.5.

Expected factor exposures:

- Standardized probability of default: 2%.
- Standardized average daily trading volume: -1%.
- Standardized average earnings growth forecast: 1.5%.

- A) 3.5%.
- B) 4.8%.
- C) 5.5% 
- D) 6.1%.

#### Explanation

Given the factor betas and factor exposures, the expected return for the stock is calculated as follows:

$$E(R_n) = 2\% + [0.5 \times 2\%] + [(-0.2) \times (-1\%)] + [1.5 \times 1.5\%]$$

$$E(R_n) = 5.5\%$$

(Book 1, Module 6.2, LO 6.c)

---

### Question #20 of 100

Question ID: 1512573