

### Question #1 of 79

The fixed-rate receiver in a plain vanilla interest rate swap has a position equivalent to a series of:

- A) long interest-rate puts and short interest-rate calls.
  - B) long interest-rate puts.
  - C) short interest-puts and long interest-rate calls.
- 

### Question #2 of 79

The price of a forward contract:

- A) depends on forward interest rates.
  - B) changes over the term of the contract.
  - C) is determined at contract initiation.
- 

### Question #3 of 79

Consider a fixed-rate semiannual-pay equity swap where the equity payments are the total return on a \$1 million portfolio and the following information:

- 180-day LIBOR is 4.2%
- 360-day LIBOR is 4.5%
- Div. yield on the portfolio = 1.2%

What is the fixed rate on the swap?

- A) 4.5143%.
  - B) 4.4477%.
  - C) 4.3232%.
-

Craig Champion, CFA, manages portfolios of U.S. securities for European investors. His clients have each hold different kinds of securities, and each has differing views with respect to hedging exchange rate risk.

Francois Levisque is a Belgian investor who holds a large diversified portfolio of U.S. equities. Levisque has a reputation for some success in timing the U.S. equity market. For example, he has often locked in gains on his portfolio with derivatives shortly before a market correction. Sometimes he also hedges his portfolio's currency risk.

Levisque has just instructed Champion to take a large short position in S&P 500 index, either with futures or with a forward contract. Champion notices that the futures price is less than the current spot price and consults with his colleague Danielle Silvers, CFA. Champion says he thinks that the futures price is less than the spot price because the dividend yield of the S&P 500 is greater than the Treasury Bill rate. Silvers says that it could just be backwardation.

Silvers also notes that the use of a forward contract might be a good idea because the contract will not attract the attention of other market participants who might react to Levisque's move. Champion tells Silvers that the reason Levisque wants to hedge his equity position is that he thinks all U.S. interest rates will increase soon. This, he believes, is bearish for equities.

Ragnar Hvammen is a Norwegian investor with a large investment in oil-related assets that he often hedges with futures contracts. Champion notices that the price of an oil futures contract is usually higher than the spot price. Hvammen uses short-term borrowings in dollars, from both European and U.S. banks, to meet the liquidity needs of his oil investments, and he has Champion hedge these loan positions with Eurodollar futures.

Silvers suggests that Champion should consider using T-bill futures to hedge the loans from U.S. banks, and use Eurodollar futures only for the Eurodollar loans. Champion says he will look into that, as well as forward rate agreements, as alternative hedging tools for Hvammen.

Champion is also evaluating pricing of Euro-bund futures. Specifically, he is looking for pricing on a 1.2-year contract. The CTD is a 2.5% 10-year bund issued 1 year ago (just paid coupon) currently quoted at €104.10. The conversion factor for the bond is 1.08. At contract expiration, the underlying will have accrued interest of €0.42. Assume that the risk-free rate over the contract period is 1%.

## Question #4 of 79

Champion and Silvers each gave a reason for why the futures price of the S&P 500 index might be less than the spot price. With respect to their statements, it is *most accurate* to conclude that:

- A) neither statement is valid.
  - B) both statements are valid.
  - C) Champion's statement is invalid while Silver's statement is valid.
- 

### Question #5 of 79

For a futures contract on an asset with no storage costs, convenience yield, or other expected cash flows over the term of the contract, there should be a:

- A) positive correlation between the futures price and interest rates and a negative correlation between the futures price and the spot price.
  - B) negative correlation between the futures price and interest rates and a positive correlation between the futures price and the spot price.
  - C) positive correlation between the futures price and both interest rates and the spot price.
- 

### Question #6 of 79

Oil futures prices might be higher than the spot price because:

- A) there are more benefits than costs to holding the asset.
  - B) there are more costs than benefits to holding the asset.
  - C) of reverse contango.
- 

### Question #7 of 79

The no-arbitrage futures price of the Euro-bond contract is *closest* to:

- A) €102.85
  - B) €94.83
  - C) €110.61
- 

### Question #8 of 79

An index is currently 965 and the continuously compounded dividend yield on the index is 2.3%. What is the no-arbitrage price on a one-year index forward contract if the continuously compounded risk-free rate is 5%.

- A) 991.4.
  - B) 991.1.
  - C) 987.2.
- 

### Question #9 of 79

Which of the following is equivalent to a pay-floating USD receive-fixed EUR currency swap position?

- A) A long position in a EUR bond coupled with the issuance of a USD-denominated floating rate note.
  - B) A short position in a EUR bond coupled with a long position in a USD-denominated floating rate note.
  - C) A short position in a EUR bond coupled with the issuance of a USD-denominated floating rate note.
- 

### Question #10 of 79

The fixed-rate on a semiannual 2-year interest rate swap is *closest* to the:

- A) coupon rate on a 2-year par bond with the same credit risk as the fixed-rate payer.



- B)** coupon rate on a 2-year par bond with the same credit risk as the reference rate.
  - C)** current 180-day T-bill rate.
- 

### Question #11 of 79

The fixed-rate payer in an interest-rate swap has a position equivalent to a series of:

- A)** long interest-puts and short interest-rate calls.
  - B)** short interest-rate puts and long interest-rate calls.
  - C)** long interest-rate puts and calls.
- 

### Question #12 of 79

For a 1-year quarterly-pay swap, an equivalent position with short puts and long calls would involve:

- A)** three put-call combinations expiring on the first three settlement dates of the swap.
  - B)** put-call combinations expiring on each of the four settlement dates.
  - C)** three put-call combinations on the last three settlement dates of the swap.
- 

John Williams, CFA, works in the treasury department of Sam Smith Leisure Inc., a U.S. based manufacturer of gym equipment. Recently he has been considering using derivative instruments to lock in returns on excess cash flows that tend to accumulate in the final quarter of each year as demand for equipment peaks during that time.

He estimates that this year, in 60-days, the company will have \$28.5 million in excess funds to invest for 90 days.

Williams is presenting to the board 60 days before the excess funds need to be deposited, which is also 30 days before the year end. He intends to suggest an FRA as a method of locking in a return on the deposit. He intends to make the following two statements in favor of using an FRA.

#### Statement 1

As we are depositing cash, committing to an FRA will generate a cash inflow on the date we enter into it.

## Statement 2

If rates move in our favor, we will receive a cash payment at the end of the notional borrowing period.

Williams will present the hypothetical rates and LIBORs shown in Exhibit 1 to illustrate the result of using an FRA. Current 2x5 FRA price is 3.8%. All rates are annualized.

### Exhibit 1 – FRA Price and Theoretical Future LIBOR rates

Predicted LIBOR rates	In 30 days	In 60 days	In 90 days	In 120 days	In 150 days
30-day LIBOR	3.9%	4.0%	4.2%	4.4%	4.5%
60-day LIBOR	4.1%	4.4%	4.5%	4.7%	4.8%
90-day LIBOR	4.2%	4.7%	4.8%	4.9%	5.2%
120-day LIBOR	4.5%	5.0%	5.2%	5.3%	5.5%
150-day LIBOR	4.8%	5.3%	5.4%	5.6%	5.9%

One key question that the CFO is likely to ask is the predicted value of the FRA at the year end.

Williams is also currently investigating a bond forward contract opened by a former employee 30 days ago, who in doing so overstepped his authority. Details of the contract are shown in exhibit 2.

### Exhibit 2 – Bond Forward Contract At Initiation

Forward Price:	\$1,050.52 per \$1,000 par value
Contract Notional Value:	\$100,000
Maturity:	Forward contract expires in 200-days
Underlying Bond:	US Treasury 6% coupon
Coupon Payments:	Coupon has just been paid, coupons paid every 182 days

Williams has discovered that the employee bought 15 contracts. The board is concerned about the potential losses and intends to ask the third party if they can buy their way out of the

contract if the company has exposure of more than \$235,000 at the year end. At that date the contract will have 110 days until maturity.

Williams intends to calculate the exposure using an annual risk-free rate of 3.8% and two price scenarios:

**Scenario 1**

The forward contract price at the year-end is 15% below the initial forward contract price.

**Scenario 2**

The forward contract price at the year-end is 10% below the initial forward contract price.

A board member has also asked Williams for an overview of equity swaps. The member is a trustee of a pension fund that is considering the use of an equity swap to manage the return on its equity portfolio.

The trustee stated in an e mail to Williams the fund is looking to turn equity returns into a guaranteed return for up to 4 years through the use of a quarterly equity for floating rate swap. He is interested in getting Williams' view on what would constitute a fair price for the swap.

Williams intends to reply with the following points:

**Point 1**

To turn equity returns into a guaranteed return the fund should enter into an equity for floating rate swap as the equity payer.

**Point 2**

It is not possible to quote a price for an equity for floating swap.

Finally Williams is to investigate the potential for Sam Smith Inc to use a currency swap to borrow and invest in a manufacturing facility in Europe. A bank has offered the company a fixed for fixed currency swap involving US dollars and Euros.

Some of the swap details are outlined in exhibit 3.

**Exhibit 3 – Currency Swap**

Initiation:	1st January
Spot rate at initiation:	USD/EUR 1.19
Settlement:	Quarterly

Principal:	USD 40,000,000
Fixed EUR rate:	1.5%
Fixed USD rate:	1.3%

### Question #13 of 79

Which of Williams' statements regarding FRAs is most likely correct?

- A) Only Statement 1 is correct
  - B) Neither statement is correct
  - C) Only Statement 2 is correct
- 

### Question #14 of 79

Using the price and predicted LIBOR rates in exhibit 1, which of the following is closest to the predicted value of the FRA at the year end?

- A) -\$62,000
  - B) -\$85,000
  - C) -\$100,000
- 

### Question #15 of 79

Which of the scenarios tested by Williams would most likely lead the board to request a buy-out of the bond futures contract outlined in exhibit 2?

- A) Both scenarios
  - B) Neither scenario
  - C) Scenario 1 only
-



### Question #16 of 79

How many of Williams' points regarding the proposed equity swap are correct?

- A) Both points are correct
  - B) Only one of the points is correct
  - C) Neither point is correct
- 

### Question #17 of 79

Using the details shown in exhibit 3, under the terms of the currency swap at the first settlement date Sam Smith would most likely:

- A) pay USD 130,000
  - B) pay EUR 150,000
  - C) pay EUR 126,050
- 

### Question #18 of 79

Which of the following statements regarding cash flows at the final settlement date for the currency swap outlined in exhibit 3 is *most likely* correct?

- A) Sam Smith Inc will receive USD 40,000,000 plus the USD interest payment
  - B) Without knowing the spot rates on the final settlement date, it is impossible to state the cash flows that occur
  - C) Sam Smith will pay USD 40,000,000 and receive the final USD interest payment
- 

### Question #19 of 79

90 days ago the exchange rate was USD 0.83 per CDN and the term structure was:

	180 days	360 days
USD LIBOR	5.2%	5.6%
CDN LIBOR	4.8%	5.4%.

A 1 year, semi-annual settlement, fixed for fixed swap was initiated with 5.30% fixed for CDN and 5.52% fixed for USD on a principal of USD 1 million.

Current exchange rate is USD 0.84 per CDN and the yield curve is:

	90 days	270 days
USD LIBOR	5.2%	5.6%
Disc Factor	0.98717	0.95969
CDN LIBOR	4.8%	5.4%
Disc factor	0.98814	0.96108

What is the value of the swap to the USD interest payer?

- A) \$11,500.
- B) \$10,126.
- C) -\$3,472.

### Question #20 of 79

What is the value of a 6.00% 1x4 (30 days x 120 days) forward rate agreement (FRA) with a principal amount of \$2,000,000, 10 days after initiation if  $L_{10(110)}$  is 6.15% and  $L_{10(20)}$  is 6.05%?

- A) \$700.00.
- B) \$767.40.
- C) \$745.76.

### Question #21 of 79

Consider a fixed-for-fixed 1-year \$100,000 semiannual currency swap with rates of 5.0% in USD and 4.8% in CHF, originated when the exchange rate is \$0.34. After the first settlement, the exchange rate is \$0.35 and the term structure is:

	90 days	270 days
LIBOR	5.2%	5.6%
Swiss	4.8%	5.4%

What is the value of the swap to the USD payer?

- A) -\$2,719.
  - B) \$2,937
  - C) \$2,814.
- 

### Question #22 of 79

At contract initiation, the value of a forward contract:

- A) is typically zero regardless of the price of the underlying asset.
  - B) is set to 100 by convention.
  - C) depends on the market price of the underlying asset.
- 

### Question #23 of 79

A stock is currently priced at \$110 and will pay a \$2 dividend in 85 days and is expected to pay a \$2.20 dividend in 176 days. The no arbitrage price of a six-month (182-day) forward contract when the effective annual interest rate is 8% is *closest* to:

- A) \$110.20.
  - B) \$110.00.
  - C) \$110.06.
-

### Question #24 of 79

At expiration, the value of a forward contract is:

- A) always greater than or equal to zero.
  - B) the difference between the contract price and the market value of the underlying asset.
  - C) equal to the market price of the underlying asset.
- 

### Question #25 of 79

Consider a fixed-rate semiannual-pay equity swap where the equity payments are the total return on a \$1 million portfolio and the following information:

- 180-day LIBOR is 5.2%
- 360-day LIBOR is 5.5%
- Dividend yield on the portfolio = 1.2%

What is the fixed rate on the swap?

- A) 5.1387%.
  - B) 5.4197%.
  - C) 5.4234%.
- 

### Question #26 of 79

To initiate an arbitrage trade if the futures contract is underpriced, the trader should:

- A) borrow at the risk-free rate, buy the asset, and sell the futures.
  - B) short the asset, invest at the risk-free rate, and buy the futures.
  - C) borrow at the risk-free rate, short the asset, and sell the futures.
- 

### Question #27 of 79



The no-arbitrage price of a futures contract with a spot rate of 990, a time to maturity of 2 years, and a risk-free-rate of 5% is *closest* to:

- A) 1091
  - B) 792
  - C) 1040
- 

### Question #28 of 79

An index is currently 876, the risk-free rate ( $R_f$ ) is 7%, and the dividend yield on the index portfolio is 1.8%. Assuming that these are continuously compounded yields, the price of an 18-month index future is *closest* to:

- A) 945.2.
  - B) 947.1.
  - C) 943.0.
- 

### Question #29 of 79

The floating-rate payer in a simple interest-rate swap has a position that is equivalent to:

- A) issuing a floating-rate bond and a series of long FRAs.
  - B) a series of long forward rate agreements (FRAs).
  - C) a series of short FRAs.
- 

### Question #30 of 79

Consider a one-year currency swap with semiannual payments. The payments are in U.S. dollars and euros. The current exchange rate of the euro is \$1.30 and interest rates are

	180 days	360 days
USD LIBOR	5.6%	6.0%
Euribor	4.8%	5.4%

What is the fixed rate in euros?

- A) 5.318%.
  - B) 2.659%.
  - C) 5.245%.
- 

### Question #31 of 79

A swap is equivalent to a series of:

- A) FRAs priced at market rates.
  - B) interest rate calls.
  - C) off-market FRAs.
- 

### Question #32 of 79

Consider a 1-year semiannual equity swap based on an index at 985 and a fixed rate of 4.4%. 90 days after the initiation of the swap, the index is at 982 and London Interbank Offered Rate (LIBOR) is 4.6% for 90 days and 4.8% for 270 days. The value of the swap to the equity payer, based on a \$2 million notional value is *closest* to:

- A) -\$22,564
  - B) \$22,564
  - C) \$22,314
-

Wanda Brock works as an investment strategist for Globos, an international investment bank. Brock has been tasked with designing a strategy for investing in derivatives in Mazakhasan, an Eastern European country with impressive economic growth.

One of the first tasks Brock tackles involves hedging. Globos wants to hedge some of its investments in Mazakhasan against interest-rate and currency volatility. After a bit of research, Brock has gathered the following data:

- The U.S. risk-free rate is 5.5%, The Federal Reserve Board is expected to raise the fed funds rate by 0.25% in one week.
- The current spot rate for the Mazakhasanian currency, the gluck, is 9.4073G/\$.
- Annualized 90-day LIBOR is 7.6%.
- Globos' economists expect annualized 90-day LIBOR to rise to 7.9% over the next 60 days.
- The Mazakhasan risk-free rate is 3.75% Using the above data, Brock develops some hedging strategies, and then delivers them to Globos' futures desk.

After making some calculations, Brock assesses the arbitrage opportunities in Mazakhasan and passes the information on to the futures desk. Shortly afterward, she is informed that Globos' Mazakhasan subsidiary uses its silver holdings as collateral for business loans, which allows the unit to obtain a favorable interest rate.

Jonah Mason, one of Globos' traders, asks Brock for a few details about the Mazakhasan financial markets. Brock sends Mason a short e-mail containing the following observations:

- Standard & Poor's just raised Mazakhasan's sovereign debt to investment grade.
- New technological innovations and commercial expansion has substantially boosted the income of the average Mazakhasanian.

Before Mason receives the e-mail, he turns his attention to a memo about a futures contract a subordinate is considering. Unfortunately, the memo arrives without the summary page to the notes. Mason must deduce the nature of the hedge based on its characteristics: The risk-free rate used in calculating the futures price, and that price adjusted to account for individual future cashflows.

### Question #33 of 79

The price of a 75-day gluck future should be *closest* to:

**A)** 9.3750G/\$.

B) 0.1081\$/G.

C) 9.4429G/\$.

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### Question #34 of 79

Based on the two characteristics of the futures contract in Mason's memo, which of the following does the contract refer to?

Treasury bond futures?

Stock index futures?

A) Yes

Yes

B) Yes

No

C) No

Yes

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### Question #35 of 79

Which of the following would be *most likely* to cause a contango situation with silver futures in Kazakhstan?

A) A shortage of warehouse space that drives up rental rates.

B) An increase in the availability of asset-backed loans.

C) A huge silver discovery.

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### Question #36 of 79



30 days ago, J. Klein took a short position in a \$10 million (3X6) forward rate agreement (FRA) based on the London Interbank Offered Rate (LIBOR) and priced at 5%. The current LIBOR curve is:

- 30-day = 4.8%
- 60-day = 5.0%
- 90-day = 5.1%
- 120-day = 5.2%
- 150-day = 5.4%

The current value of the FRA, to the short, is *closest* to:

- A) -\$15,280.
  - B) -\$15,495.
  - C) -\$15,154.
- 

### Question #37 of 79

The price of a 3 × 5 forward rate agreement (FRA) is the:

- A) 2-month implied forward rate 5 months from today.
  - B) 2-month implied forward rate 3 months from today.
  - C) 3-month implied forward rate 5 months from today.
- 

### Question #38 of 79

Which of the following is *equivalent* to a plain vanilla receive-fixed interest rate swap?

- A) A short position in a bond coupled with the issuance of a floating rate note.
  - B) A short position in a bond coupled with a long position in a floating rate note.
  - C) A long position in a bond coupled with the issuance of a floating rate note.
-

### Question #39 of 79

The value of the S&P 500 Index is 1,260. The continuously compounded risk-free rate is 5.4% and the continuous dividend yield is 3.5%. Calculate the no-arbitrage price of a 160-day forward contract on the index.

- A) \$562.91.
  - B) \$1,310.13.
  - C) \$1,270.54.
- 

### Question #40 of 79

Writing a series of interest-rate puts and buying a series of interest-rate calls, all at the same exercise rate, is equivalent to:

- A) being the fixed-rate payer in an interest rate swap.
  - B) a short position in a series of forward rate agreements.
  - C) being the floating-rate payer in an interest rate swap.
- 

### Question #41 of 79

A plain vanilla interest-rate swap to the fixed-rate payer is equivalent to issuing a fixed-rate bond and:

- A) selling a series of interest rate puts.
  - B) buying a floating-rate bond.
  - C) selling a series of interest rate calls.
- 

### Question #42 of 79

Consider a 1-year, \$5 million semiannual-pay fixed-rate equity swap initiated when the equity index is 750 and swap fixed rate is 3.7%. Equity index was at 760 at first settlement. It is now 270 days since inception of the swap and the index is at 767, 90-day LIBOR is 3.4% (DF = 0.99157) and 270-day LIBOR is 3.7% (DF = 0.9730). What is the value of the swap to the fixed-rate payer?

- A) -\$2,726.
- B) -\$3,520.
- C) \$3,478.

### Question #43 of 79

Which of the following *best* describes the price of a forward contract? The forward price is:

- A) always equal to the market price at contract termination.
- B) the price that makes the values of the long and short positions zero at contract initiation.
- C) always expressed in dollars.

Chantal DuPont is the CFO of Vetements Verdun, a manufacturer of specialty clothing and uniforms, located in northern France. The firm is currently undergoing an expansion which will require DuPont to draw down 25 million on Vetements Verdun's credit line as a 90-day bridge loan before the mortgage closes. The money will not be needed for 60 days, at which point the interest rate will be determined. The interest rate on the loan will be based off 90-day LIBOR.

DuPont is becoming concerned because of signs that interest rates may begin to rise. The firm cannot afford to have its borrowing costs increase significantly over current rates. In response to DuPont's concerns, the company's CEO, Viviane Lamarre, has asked DuPont to hedge the firm's borrowing costs, even if that entails some near-term outlays.

DuPont and Lamarre discuss entering into a forward rate agreement (FRA) to hedge Vetements Verdun's interest rate exposure on the credit line. Current LIBOR rates are:

Libor rate	
30-day	2.6%

60-day	2.8%
90-day	3.0%
120-day	3.2%
150-day	3.3%
180-day	3.4%

They decide to go forward with the hedge and DuPont enters into the appropriate FRA for the full amount of 25 million.

In the first 30 days of the FRA, the fixed income markets rally sharply. The new set of LIBOR rates, on the thirtieth day of the FRA, is:

Libor rate	
30-day	2.2%
60-day	2.4%
90-day	3.6%
120-day	3.8%
150-day	3.8%
180-day	3.8%

At the settlement date, the interest savings on the loan term is 23,750. DuPont tells Lamarre, "I am looking forward to cashing our settlement check for 23,750." Lamarre adds, "Yes, and on top of that we get to borrow for 90 days at a below-market rate." Both DuPont and Lamarre are pleased with their decision to hedge.

### Question #44 of 79

Which statement *most* accurately describes a 2 x 3 forward rate agreement?

- A) Two-month underlying interest rate on a contract settled in three months.
- B) Contract expires in two months on an underlying loan settled in three months.
- C) Underlying loan of two month maturity under a contract that expires in three months.

### Question #45 of 79



Which forward rate agreement would *most* effectively hedge Vetements Verdun's exposure to LIBOR?

- A) 3 x 2.
  - B) 2 x 3.
  - C) 2 x 5.
- 

### Question #46 of 79

Which value is *closest* to the price of the most effective hedge for Vetements Verdun?

- A) 3.0%.
  - B) 3.3%.
  - C) 3.6%.
- 

### Question #47 of 79

What must the 90-day LIBOR rate have been at the expiration of the contract?

- A) 3.4%.
  - B) 4.0%.
  - C) 3.6%.
- 

### Question #48 of 79

Regarding the statements made by Lamarre and DuPont about the ultimate value of their hedge:

- A) Lamarre's statement is incorrect; DuPont's statement is incorrect.
- B) Lamarre's statement is correct; DuPont's statement is incorrect.
- C) Lamarre's statement is incorrect; DuPont's statement is correct.

**Question #49 of 79**

Thirty days into the FRA, what is the value of the contract from Vetements Verdun's perspective?

- A) Owes 43,943.
  - B) Due 45,000.
  - C) Due 43,943.
- 

**Question #50 of 79**

If the one year spot rate is 5%, the two-year spot rate is 5.5%, and the three year spot rate is 6%, the fixed rate on a 3-year annual pay swap is *closest* to:

- A) 4.50%.
  - B) 5.65%.
  - C) 1.99%.
- 

**Question #51 of 79**

The forward price in a 90-day forward contract on a non-dividend-paying stock currently (at contract initiation) selling for \$55 when the 90-day risk-free rate is 5% is *closest* to:

- A) \$54.32.
  - B) \$55.67.
  - C) \$52.38.
- 

**Question #52 of 79**

The current U.S. dollar (\$) to Canadian dollar (C\$) exchange rate is 0.7. In a \$1 million currency swap, the party that is entering the swap to hedge existing exposure to C\$-denominated fixed-rate liability will:

- A) receive floating in C\$.
  - B) pay C\$1,428,571 at the beginning of the swap.
  - C) pay floating in C\$.
- 

### Question #53 of 79

The price of a forward contract:

- A) must be equal to the market price at contract termination.
  - B) is the settlement price for the underlying asset.
  - C) is equal to the value of the contract in equilibrium.
- 

### Question #54 of 79

The value of a futures contract between the times when the account is marked-to-market is:

- A) never less than the value of a forward contract entered into on the same date.
  - B) the same as the contract price.
  - C) equal to the difference between the price of a newly issued contract and the settle price at the most recent mark-to-market period.
- 

### Question #55 of 79

The price of an interest rate swap is the:

- A) cost to purchase a swap.
- B) market value of the swap.
- C) fixed rate of interest.

**Question #56 of 79**

A U.S. firm (U.S.) and a foreign firm (F) engage in a 3-year, annual pay currency swap; The USD fixed rate at initiation was 5% while FC fixed rate was 4%. At the beginning of the swap, \$2 million was paid by the U.S. firm and the exchange rate was 2 FC units per \$1. At the end of the swap period the exchange rate was 1.75 FC units per \$1.

At the end of year 1, firm:

- A) F pays firm U.S. \$200,000.
  - B) U.S. pays firm F 160,000 FC units.
  - C) U.S. pays firm F \$200,000.
- 

**Question #57 of 79**

At the inception of a market-rate plain vanilla swap, the value of the swap to the fixed-rate payer is:

- A) zero.
  - B) positive.
  - C) either positive or negative.
- 

**Question #58 of 79**

The theoretical price of a forward contract:

- A) is the no-arbitrage price.
  - B) equals the long's expectation of the future price of the underlying asset.
  - C) is always greater than the current price of the underlying asset.
- 

**Question #59 of 79**



Consider a forward contract on 1 million Mexican Pesos at \$0.08254/MXN. 60 days prior to expiration the U.S. risk-free rate is 5%, the Mexican risk-free rate is 6%, and the spot and forward rates are \$0.08211/MXN and \$0.08198 respectively. The value of the contract to the long MXN party is *closest* to:

- A) \$553.
  - B) -\$297.
  - C) -\$553.
- 

### Question #60 of 79

price of \$1,310. Next coupon payment will be made in 150 days. The annual risk-free rate is 5%.

- A) \$1,305.22.
  - B) \$1,270.79.
  - C) \$1,333.50.
- 

### Question #61 of 79

The price and value of a plain vanilla interest-rate swap are:

- A) only equal at the inception of a swap contract.
  - B) never equal.
  - C) equal in equilibrium.
- 

### Question #62 of 79

A company has chosen to use a 6 x 9 FRA expiring in 6 months to mitigate the risk of paying a floating coupon on the bond issue. The current term structure for LIBOR is as follows:

Term	Interest Rate
180 days	5.65%
270 days	5.95%

What is the price of this forward rate agreement (FRA)?

- A) 6.37%
  - B) 3.19%
  - C) \$6.37
- 

### Question #63 of 79

At the expiration of a futures contract, the difference between the spot and the futures price is:

- A) equal to zero.
  - B) at its point of highest volatility.
  - C) always positive.
- 

### Question #64 of 79

Consider a 9-month forward contract on a 10-year 7% Treasury note just issued at par. The effective annual risk-free rate is 5% over the near term and the first coupon is to be paid in 182 days. The price of the forward is *closest* to:

- A) 1,037.27.
  - B) 965.84.
  - C) 1,001.84.
-

## Question #65 of 79

Calculate the price (expressed as an annualized rate) of a 1x4 forward rate agreement (FRA) if the current 30-day rate is 5% and the 120-day rate is 7%.

- A) 7.47%.
- B) 7.63%.
- C) 6.86%.

Frank Potter, CFA, a financial adviser for Star Financial, LLC has been hired by John Williamson, a recently retired executive from Reston Industries. Over the years Williamson has accumulated \$10 million worth of Reston stock and another \$2 million in a cash savings account. Potter has a number of unconventional investment strategies for Williamson's portfolio; many of the strategies include the use of various equity derivatives.

Potter's first recommendation involves the use of a total return equity swap. Potter outlines the characteristics of the swap in Table 1. In addition to the equity swap, Potter explains to Williamson that there are numerous options available for him to obtain almost any risk return profile he might need. Potter suggest that Williamson consider options on both Reston stock and the S&P 500. Potter collects the information needed to evaluate options for each security. These results are presented in Table 2.

**Table 1: Specification of Equity Swap**

Term	3 years
Notional principal	\$10 million
Settlement frequency	Annual, commencing at end of year 1
Fairfax pays to broker	Total return on Reston Industries stock
Broker pays to Fairfax	Total return on S&P 500 Stock Index

**Table 2: Option Characteristics**

	Reston	S&P 500
Stock price	\$50.00	\$1,400.00
Strike price	\$50.00	\$1,400.00

Interest rate	6.00%	6.00%
Dividend yield	0.00%	0.00%
Time to expiration (years)	0.5	0.5
Volatility	40.00%	17.00%
Beta Coefficient	1.23	1
Correlation	0.4	

**Table 3: Regular and Exotic Options (Option Values)**

	Reston	S&P 500
European call	\$6.31	\$6.31
European put	\$4.83	\$4.83
American call	\$6.28	\$6.28
American put	\$4.96	\$4.96

**Table 4: Reston Stock Option Sensitivities**

	Delta
European call	0.5977
European put	-0.4023
American call	0.5973
American put	-0.4258

**Table 5: S&P 500 Option Sensitivities**

	Delta
European call	0.622
European put	-0.378
American call	0.621
American put	-0.441

Potter has also been asked to evaluate the interest rate risk of an intermediate size bank. The bank has a large floating rate liability of \$100,000,000 on which it pays the London Inter Bank Offered Rate (LIBOR) on a quarterly basis. Potter is concerned about the significant interest rate risk the bank incurs because of this liability: since most of the bank's assets are invested in fixed rate instruments there is a considerable duration mismatch. Some of the bank's assets

are floating rate notes tied to LIBOR, however, the total par value of these securities is significantly less than the liability position.

Potter considers both swaps and interest rate options. The interest rate options are 2-year caps and floors with quarterly exercise dates. Potter wishes to hedge the entire liability.

Potter has obtained the prices for an at-the-money 6 month cap and floor with quarterly exercise. These are shown in Table 6.

**Table 6: At-the-Money 0.5 year Cap and Floor Values**

Price of at-the-money Cap	\$133,377
Price of at-the-money Floor	\$258,510

### Question #66 of 79

Williamson would like to consider neutralizing his Reston equity position from changes in Reston's stock price. Using the information in Tables 3 and 4 how many standard Reston European options would have to be bought/sold in order to create a delta neutral portfolio?

- A) Sell 370,300 call options.
- B) Buy 497,141 put options.
- C) Sell 497,141 put options.

### Question #67 of 79

Williamson is very interested in the total return swap. He asks Potter how much it would cost to enter into this transaction. Which of the following is the *most likely* cost of the swap at inception?

- A) \$45,007.
- B) \$340,885.
- C) \$0.



### Question #68 of 79

Williamson likes the characteristics of the swap arrangement in Table 1 but would like to consider the options in Table 3 before making an investment decision. Given Williamson's current situation which of the following option trades makes the *most* sense in the short-term (all options are on Reston stock)?

- A) Buy out-of-the-money call options.
  - B) Sell at-the-money-call options.
  - C) Buy at-the-money put options.
- 

### Question #69 of 79

Potter analyzes alternative hedging strategies to address the risk of the bank's large floating-rate liability. Which of the following is the *most appropriate* transaction to efficiently hedge the interest rate risk for the floating rate liability without sacrificing potential gains from interest rate decreases?

- A) Buy an interest rate cap.
  - B) Sell an interest rate cap.
  - C) Buy an interest rate collar.
- 

### Question #70 of 79

Potter is now considering some of the bank's floating rate assets. Which of the following transactions is the *most appropriate* to minimize the interest rate risk of these assets without sacrificing upside gains?

- A) Buy a floor.
  - B) Buy a collar.
  - C) Buy a cap.
-

### Question #71 of 79

The contract price of a forward contract is:

- A) determined at the settlement date.
  - B) the price that makes the contract a zero-value investment at initiation.
  - C) always the present value of the expected future spot price.
- 

### Question #72 of 79

What is the difference between spot and futures prices? Spot prices are always:

- A) delivered to meet the futures obligation at expiration.
  - B) lower than futures prices.
  - C) equal to the futures price at futures expiration.
- 

### Question #73 of 79

During the life of a forward contract, the value of the contract is *best* described as:

- A) the difference between the future value of the spot price and the expected future price of the underlying asset.
  - B) the present value of the expected future price of the underlying asset.
  - C) the difference between the spot price and the present value of the forward price of the underlying asset.
- 

### Question #74 of 79

Which of the following is *equivalent* to a pay-fixed swap with a tenor of two years with semi-annual swap payments and a fixed rate of 6% (exchanged for LIBOR)? The notional principal is \$100,000,000.

- A) A strip of three forward rate agreements, which obligates the party to pay a fixed rate of 6% and receive six-month LIBOR on a notional principal of \$100,000,000.
  - B) A strip of two forward rate agreements, which obligates the party to pay a fixed rate of 6% and receive six-month LIBOR on a notional principal of \$100,000,000.
  - C) A forward rate agreement, which obligates the party to pay a fixed rate of 6% and receive six-month LIBOR on a notional principal of \$100,000,000.
- 

### Question #75 of 79

A portfolio manager holds 100,000 shares of IPRD Company (which is trading today for \$9 per share) for a client. The client informs the manager that he would like to liquidate the position on the last day of the quarter, which is 2 months from today. To hedge against a possible decline in price during the next two months, the manager enters into a forward contract to sell the IPRD shares in 2 months. The risk-free rate is 2.5%, and no dividends are expected to be received during this time. However, IPRD has a historical dividend yield of 3.5%. The forward price on this contract is *closest* to:

- A) \$903,712.
  - B) \$905,175.
  - C) \$901,494.
- 

### Question #76 of 79

Over the life of a swap, the price of the swap:

- A) does not change.
  - B) is approximately equal to the market value of the swap.
  - C) fluctuates with changes in the yield curve.
- 

### Question #77 of 79

Calculate the no-arbitrage forward price for a 90-day forward on a stock that is currently priced at \$50.00 and is expected to pay a dividend of \$0.50 in 30 days and a \$0.60 in 75 days. The annual risk free rate is 5% and the yield curve is flat.

- A) \$49.49.
- B) \$48.51.
- C) \$50.31.

### Question #78 of 79

Suppose a forward rate agreement (FRA) calls for us to receive the six-month London Interbank Offered Rate (LIBOR) two years from now for a payment of a fixed rate of interest of 6%. Which of the following structures is equivalent to this long FRA? A long:

- A) put and a short call on LIBOR with a strike rate of 6% and two years to expiration.
- B) call and a short put on LIBOR with a strike rate of 6% and two years to expiration.
- C) call on LIBOR with a strike rate of 6% and eighteen months to expiration.

### Question #79 of 79

A \$10 million 2-year semi-annual-pay LIBOR-based interest-rate swap was initiated 180 days ago when swap fixed rate was 3.8%. The fixed rate on the swap is now 3.4% and the term structure is as follows:

Days	LIBOR	Discount Factor
180	3.00%	0.98522
360	3.20%	0.96899
540	3.40%	0.95148
720	4.00%	0.92593

Value of the swap to the payer is *closest* to:

- A) -\$58,114.

**B)** -\$45,633.

**C)** -\$29,229.

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