***Financial Markets and Institutions, 7e* (Saunders)**

**Chapter 10 Derivative Securities Markets**

1) A credit forward is a forward agreement that hedges against an increase in default risk on a loan after the loan has been created by a lender.

2) Forward contracts are marked to market daily.

3) Futures or option exchange members who take positions on contracts for only a few moments are called scalpers.

4) The purchaser of a T-bond futures contract priced at 101-16 at the time of sale agrees to deliver $100,000 face value Treasury bonds in exchange for receiving $101,500 at contract maturity.

5) A negotiated non-standardized agreement between a buyer and seller (with no third-party involvement) to exchange an asset for cash at some future date with the price set today is called a forward agreement.

6) Marking to market of futures contracts is the process of realizing gains and losses each day as the futures contract changes in price.

7) European-style options are options that may only be exercised at maturity.

8) In a futures contract, if funds in the margin account fall below the maintenance margin requirement, a margin call is issued.

9) You would expect the price quote for a put option to be at least $10 if the put had an exercise price of $40 and the underlying stock was selling for $50.

10) A clearinghouse backs the buyer's and seller's position in a forward contract.

11) American options can only be exercised at maturity.

12) If you think that interest rates are likely to rise substantially over the next several years, you might sell a T-bond futures contract or buy an interest rate cap to take advantage of your expectations.

13) Writing a put option results in a potentially limited gain and a potentially unlimited loss.

14) The buyer of a call option on stock benefits if the underlying stock price rises or if the volatility of the stock's price increases.

15) An in the money American call option increases in value as expiration approaches, but an out of the money American call option decreases in value as expiration approaches.

16) Of the following, the most recent derivative security innovations are

A) foreign currency futures.

B) interest rate futures.

C) stock index futures.

D) stock options.

E) credit derivatives.

17) By convention, a swap buyer on an interest rate swap agrees to

A) periodically pay a fixed rate of interest and receive a floating rate of interest.

B) periodically pay a floating rate of interest and receive a fixed rate of interest.

C) swap both principal and interest at contract maturity.

D) back both sides of the swap agreement.

E) act as the dealer in the swap agreement.

18) An increase in which of the following would increase the price of a call option on common stock, ceteris paribus?

I. Stock price

II. Stock price volatility

III. Interest rates

IV. Exercise price

A) II only

B) II and IV only

C) I, II, and III only

D) I, III, and IV only

E) I, II, III, and IV

19) Which of the following is true?

A) Forward contracts have no default risk.

B) Futures contracts require an initial margin requirement be paid.

C) Forward contracts are marked to market daily.

D) Forward contract buyers and sellers do not know who the counterparty is.

E) Futures contracts are only traded over the counter.

20) A professional futures trader who buys and sells futures for his own account throughout the day but typically closes out his positions at the end of the day is called a

A) floor broker.

B) day trader.

C) position trader.

D) specialist.

E) hedger.

21) You have agreed to deliver the underlying commodity on a futures contract in 90 days. Today the underlying commodity price rises and you get a margin call. You must have

A) a long position in a futures contract.

B) a short position in a futures contract.

C) sold a forward contract.

D) purchased a forward contract.

E) purchased a call option on a futures contract.

22) You find the following current quote for the March T-bond contract: $100,000; Pts 32nd, of 100 percent.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Open | High | Low | Settle | Open Interest |
| 89-12 | 89-24 | 88-22 | 89-22 | 55,210 |

You went long in the contract at the open. Which of the following is/are true?

I. At the end of the day, your margin account would be increased.

II. 55,210 contracts were traded that day.

III. You agreed to deliver $100,000 face value T-bonds in March in exchange for $89,120.

IV. You agreed to purchase $100,000 face value T-bonds in March in exchange for $89,375.

A) I, II, and III only

B) I, II, and IV only

C) I and III only

D) I and IV only

E) IV only

23) A contract that gives the holder the right to sell a security at a preset price only immediately before contract expiration is a(n)

A) American call option.

B) European call option.

C) American put option.

D) European put option.

E) knockout option.

24) A higher level of which of the following variables would make a put option on common stock more valuable, ceteris paribus?

I. Stock price

II. Stock price volatility

III. Interest rates

IV. Exercise price

A) II only

B) II and IV only

C) I, II, and III only

D) I, III, and IV only

E) I, II, III, and IV

25) A speculator may write a put option on stock with an exercise price of $15 and earn a $3 premium only if he thought

A) the stock price would stay above $12.

B) the stock volatility would increase.

C) the stock price would fall below $18.

D) the stock price would stay above $15.

E) the stock price would rise above $18 or fall below $12.

26) You have taken a stock option position and, if the stock's price drops, you will get a level gain no matter how far prices fall, but you could go bankrupt if the stock's price rises. You have\_\_\_\_\_\_\_\_.

A) bought a call option.

B) bought a put option.

C) written a call option.

D) written a put option.

E) written a straddle.

27) You have taken a stock option position and, if the stock's price increases, you could lose a fixed small amount of money, but if the stock's price decreases, your gain increases. You must have \_\_\_\_\_\_\_\_.

A) bought a call option

B) bought a put option

C) written a call option

D) written a put option

E) purchased a straddle

28) In a bear market, which option positions make money?

I. Buying a call.

II. Writing a call.

III. Buying a put.

IV. Writing a put.

A) I and II

B) I and III

C) II and IV

D) II and III

E) I and IV

29) The higher the exercise price, the \_\_\_\_\_\_\_\_ the value of a put and the \_\_\_\_\_\_\_\_ the value of a call.

A) higher; higher

B) lower; lower

C) higher; lower

D) lower; higher

30) Measured by the amount outstanding, the largest type of derivative market in the world is the

A) futures market.

B) forward market.

C) swap market.

D) options market.

E) credit forward market.

31) A stock has a spot price of $55. Its May options are about to expire. One of its puts is worth $5 and one of its calls is worth $10. The exercise price of the put must be \_\_\_\_\_\_\_\_ and the exercise price of the call must be \_\_\_\_\_\_\_\_.

A) $50; $45

B) $55; $55

C) $60; $45

D) $60; $50

E) One cannot tell from the information given.

32) An agreement between two parties to exchange a series of specified periodic cash flows in the future based on some underlying instrument or price is a(n)

A) forward agreement.

B) futures contract.

C) interest rate collar.

D) option contract.

E) swap contract.

33) An investor has unrealized gains in 100 shares of Amazin stock for which he does not wish to pay taxes. However, he is now bearish upon the stock for the short term. The stock is at $76 and he buys a put with a strike of $75 for $300. At expiration the stock is at $68. What is the net gain or loss on the entire stock/option portfolio?

A) $700

B) −$800

C) −$400

D) −$200

E) −$100

34) New futures contracts must be approved by

A) the CFTC.

B) the SEC.

C) the Warren Commission.

D) the NYSE.

E) the Federal Reserve.

35) An investor is committed to purchasing 100 shares of World Port Management stock in six months. She is worried the stock price will rise significantly over the next six months. The stock is at $45 and she buys a six-month call with a strike of $50 for $250. At expiration the stock is at $54. What is the net economic gain or loss on the entire stock/option portfolio?

A) −$500

B) −$750

C) −$900

D) $400

E) $500

36) A bank with short-term floating-rate assets funded by long-term fixed-rate liabilities could hedge this risk by

I. buying a T-bond futures contract.

II. buying options on a T-bond futures contract.

III. entering into a swap agreement to pay a fixed rate and receive a variable rate.

IV. entering into a swap agreement to pay a variable rate and receive a fixed rate.

A) I and III only

B) I, II, and IV only

C) II and IV only

D) III only

E) IV only

37) A bank with long-term fixed-rate assets funded with short-term rate-sensitive liabilities could do which of the following to limit their interest rate risk?

I. Buy a cap.

II. Buy an interest rate swap.

III. Buy a floor.

IV. Sell an interest rate swap.

A) I and II only

B) III only

C) I and IV only

D) II and III only

E) III and IV only

38) An interest rate floor is designed to protect an institution from

I. falling interest rates.

II. falling bond prices.

III. increased credit risk on loans.

IV. swap counterparty credit risk.

A) I and IV

B) II and III

C) I and III

D) II and IV

E) I only

39) An interest rate collar is

A) writing a floor and writing a cap.

B) buying a cap and writing a floor.

C) an option on a futures contract.

D) buying a cap and buying a floor.

E) None of these choices are correct.

40) My bank has a larger number of adjustable-rate mortgage loans outstanding. To protect our interest rate income on these loans, the bank could

I. enter into a swap to pay fixed and receive variable.

II. enter into a swap to pay variable and receive fixed.

III. buy an interest rate floor.

IV. buy an interest rate cap.

A) I and III only

B) I and IV only

C) II and III only

D) II and IV only

41) A contract wherein the buyer agrees to pay a specified interest rate on a loan that will be originated at some future time is called a(n)

A) forward rate agreement.

B) futures loan.

C) option on a futures contract.

D) interest rate swap contract.

E) currency swap contract.

42) Two competing fully electronic derivatives markets in the United States are

A) CME Globex and Eurex.

B) Philadelphia Exchange and AMEX.

C) NYSE and ABS.

D) CME and Pacific Exchange.

E) D-Trade and IMM.

43) Your firm enters into a swap agreement with a notional principal of $40 million wherein the firm pays a fixed rate of interest of 5.50 percent and receives a variable rate of interest equal to LIBOR plus 150 basis points. If LIBOR is currently 3.75 percent, the NET amount your firm will receive (+) or pay (−) on the next transaction date is

A) − $2,200,000.

B) $2,625,000.

C) $125,000.

D) − $100,000.

E) − $875,000.

44) Refer to the Listed Stock Option Price Quote from February and assume it is now January:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| IRQ | | | | Underlying stock price $45.23 | | | | | |
| Expiration | STRIKE | Call | | | | Put | | | |
|  |  | LAST | VOLUME | | OPEN  INTEREST | | LAST | VOLUME | OPEN  INTEREST | |
| Mar | 50 | ? | 102 | | 12,578 | | 6.55 | 80 | 11,175 | |
| Jun | 50 | 2.25 | 35 | | 1,062 | | ? | 48 | 909 | |

Based on the option quote, the March call should cost

A) more than $477.

B) more than $102.

C) less than $665 but more than $477.

D) less than $225.

E) $0.

45) Refer to the Listed Stock Option Price Quote from February and assume it is now January:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| IRQ | | | | Underlying stock price $45.23 | | | | | |
| Expiration | STRIKE | Call | | | | Put | | | |
|  |  | LAST | VOLUME | | OPEN  INTEREST | | LAST | VOLUME | OPEN  INTEREST | |
| Mar | 50 | ? | 102 | | 12,578 | | 6.55 | 80 | 11,175 | |
| Jun | 50 | 2.25 | 35 | | 1,062 | | ? | 48 | 909 | |

Based on the option quote, the June put should cost

I. more than $477.

II. more than $665.

III. more than the March and June 60 calls.

IV. more than the March 60 call but no more than the June 60 call.

A) I only

B) I, II, and IV only

C) I, II, and III only

D) I and III only

E) IV only

46) Refer to the Listed Stock Option Price Quote from February and assume it is now January:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| IRQ | | | | Underlying stock price $45.23 | | | | | |
| Expiration | STRIKE | Call | | | | Put | | | |
|  |  | LAST | VOLUME | | OPEN  INTEREST | | LAST | VOLUME | OPEN  INTEREST | |
| Mar | 50 | ? | 102 | | 12,578 | | 6.55 | 80 | 11,175 | |
| Jun | 50 | 2.25 | 35 | | 1,062 | | ? | 48 | 909 | |

If you buy the March put and don't exercise before contract maturity, you will make a profit if the stock price at maturity \_\_\_\_\_\_\_\_ from today's price.

A) increases by more than 9.65 percent

B) increases by more than 4.57 percent

C) decreases by more than 3.94 percent

D) decreases by more than 11.99 percent

E) does not decrease by more than 5.64 percent

47) A bank has made a risky loan to a midsize consumer goods manufacturer. With the weaker economy, the borrower is expected to have trouble repaying the loan. The bank decides to purchase a digital default option. Which one of the following payout patterns does a digital option provide?

A) The option seller pays a stated amount to the option buyer, usually the par on the loan or bond, in the event of a default on the underlying credit.

B) The option seller pays the buyer if the default risk premium or yield spread on a specified benchmark bond of the borrower increases above some exercise spread.

C) If the option buyer makes fixed periodic payments to the option seller, the seller will pay the option buyer if a credit event occurs.

D) If the option buyer makes periodic payments to the seller and delivers the underlying bond or loan, the seller pays the par value of the security.

E) If interest rates change, the option seller will begin making fixed-rate payments to the option buyer.

48) A bank lender is concerned about the creditworthiness of one of its major borrowers. The bank is considering using a swap to reduce its credit exposure to this customer. Which type of swap would best meet this need?

A) Interest rate swap

B) Currency swap

C) Equity linked swap

D) Credit default swap

E) DIF swap

49) The type of swap most closely linked to the subprime mortgage crisis is the \_\_\_\_\_\_\_\_.

A) interest rate swap

B) currency swap

C) equity linked swap

D) credit default swap

E) DIF swap

50) What determines the success or failure of an exchange-traded derivative contract? Why were currency and interest rate futures introduced in the early and late 1970s, respectively?

51) A U.S. firm has a European subsidiary that earns euros. The subsidiary has borrowed dollars at a floating rate of interest. What kind of risk does the subsidiary have? What kind of swap could be used to limit the subsidiary's risk? Be specific.

52) When would a forward contract be better for hedging than a futures contract?

53) When might an option on a futures contract be preferable to an option on the underlying instrument?

54) How does a futures or option clearinghouse assist traders?

55) Buying an "at-the-money" call option and writing an "at-the-money" put option are two ways to make money when prices rise. When would each be the preferable strategy?

56) A stock is priced at $27. An American call option on this stock with a $25 strike must be worth at least how much? Numerically show why.

57) FNMA has direct holdings of 30-year fixed-rate mortgages financed by three- to five-year agency securities sold to the public.

What kind of interest rate swap could FNMA use to limit their interest rate risk? Explain.

58) FNMA has direct holdings of 30-year fixed-rate mortgages financed by three- to five-year agency securities sold to the public.

What kind of interest rate option could FNMA use to limit the interest rate risk? Explain how this would work. Explain how a collar could also be used.

59) Using the Black-Scholes model, explain what happens to the value of a call as S, T, and σ2 change. Why is the relationship between risk and price different for options than for other securities?

1. As S increases, C (the call premium) increases because the right to buy at the fixed price E has more value as the sale price S rises.

2. As T increases, C increases and as T decreases, C decreases. The less time remaining on the option, the lower its value since there is less time during which the option right is available.

3. As σ increases, C increases.

60) When would an option hedge be better than a futures or forward hedge?

61) Suppose a stock is priced at $50. You are bullish on the stock and are considering buying March calls with an exercise price of $45 and $55, respectively. The 45 call is priced at $8.50 and the 55 call is quoted at $2.75. What should you consider in deciding which to purchase if you do not plan on exercising prior to maturity? Be specific.

62) A stock is priced at $33.25. The stock has call options with an exercise price of $35 that expire in 60 days. The underlying stock price volatility is 39 percent per year and the annual risk-free rate is 4.5 percent. According to the Black-Scholes option pricing model, what is the most you should be willing to pay for this call option?





Using the Normsdist function in Excel to find N(dx)

C0 = ($33.25 × 0.42131) - [$35e−0.045(60/365) × 0.3607]= $1.4781 or $147.81 per contract