1. A derivative security is:

    a) A type of financial asset that is traded frequently in money markets.

    No. Money market instruments are very short-term debt obligations.

    b) A type of fixed income instrument similar to bonds and commercial paper traded in capital markets.

    No. A derivative security is not a fixed income instrument. Bonds and commercial paper are examples of fixed income instruments.

    c) A type of financial asset whose value depends on the value of another underlying asset such as stock, commodity, index, reference rates.

    Yes, that is correct. A derivative security is a financial instrument whose value depends on the value of an underlying asset such as stock, commodity, index, reference rates. Remember the name derivative gives a hint that the value of this financial asset is derived from the value of an underlying asset.

    Answer:

    The correct answer is **c**.

2. Select which of these securities are examples of derivatives securities.

    a) Options and futures

    Yes. Options and futures contracts are examples of derivative securities. Are there any others?

    b) Swaps and forwards contracts

    Yes. Swap and forward contracts are examples of derivative securities. Are there any others?

    c) Stocks and bonds

    No. Stocks and bonds are not derivative securities. Stocks are examples of equity instruments, and bonds are examples of fixed income instruments. They are often used as the underlying assets of derivative securities.

d) a and b
Correct. Both options A and B are both correct since they are the most common types of derivatives as was explained in the videos. Option C is incorrect. Bonds and stocks can often be used as the underlying asset for derivative securities, but they are not derivative securities themselves.

Answer:

The correct answer is **d**.

3. The difference between derivatives traded on exchanges and in the over the counter (OTC) market is:

a) On an exchange, an investor can obtain a derivative contract that is tailored to his needs.

No, this is not correct. Derivative contracts that are traded on exchanges are standardized.

b) Exchange-traded contracts are standardized and defined by the exchange, but in over the counter derivatives (OTC) contracts are customized and transactions costs are higher.

Yes, this is true. In exchange traded markets, the specific features of the contracts are determined by exchanges. In contrast, an investor can obtain a contract that is tailored to her needs in the over-the counter market. Since it would be harder to find a counterparty willing to provide such a contract, transaction costs are higher in OTC derivatives contracts. Anything else?

c) In exchange traded markets there is no counterparty risk since there exists a clearinghouse.

Yes, this is true. The clearinghouse acts as the counter party to both parties. The clearinghouse guarantees that the derivative trade will take place according to the conditions that were originally negotiated.

d) b and c.

Correct. Options b and c are both true statements and explain the difference between the OTC and exchange-traded markets.

Answer:

The correct answer is **d**.

4. Which of the following positions do you think would be the riskiest transaction to take in the stock index option markets if the stock market is expected to increase substantially after you complete the transaction?

   a) A short call option

      Yes. This is the riskiest. If you have a short call option, that means you have sold or written a call option. This call option will be exercised again you if the stock market increases. The option holder has the right to buy the index at the exercise price which is less than the current market level. You have potentially unlimited losses.

   b) A short put option

      No. If you have a short put option, that means you have sold or written put option. If the stock market is expected to increase substantially, this option will not be exercised as there is no positive payoff to the option holder

   c) A long call option

      No. If you have a long call option position you have purchased a call option. If the stock market increases substantially, your option will be in the money and you will profit by exercising your option.

   d) A long put option

      No. If you have a long put position, that means you purchased a put option. If the stock market increases substantially, the put option will be out of the money and will not be exercised. You will at most lose the premium you paid for the option.

   Answer:

   The correct answer is **a**.

5. Suppose RIO stock has both currently call and put options traded. What would your profit at the expiration date be if you buy the 3-month call option with an exercise price of $60 for $4 and at the same time buy the 3-month put option with the same exercise price for $6 today if the RIO stock trades for $48 in three months?

   Answer:

   The correct answer is **2**.

Recall that a call option gives you the right but not the obligation to buy the underlying at the exercise price X. The call option will be exercised if $S_T > X$, and the payoff will be $S_T - X$.

A put option gives you the right but not the obligation to see the underlying at the exercise price X. The put option will be exercised if $S_T < X$, and the payoff will be $X - S_T$.

Profit is the option payoff less the option premium.

If the stock price is $48 at expiration date, the call option will be out of the money. The payoff to the long call option is max(48 - 60, 0) = 0. However, the put option will be in the money. Your payoff from exercising the put option will be $\max(X - S_T, 0) = 60 - 48 = 12$. Your profit is your total payoff less what you paid for the options. 12 - 6 - 4 = 2.

6. The main difference between a futures and a forward contract is:

   a) Forward contracts are traded over the counter and are customized, but futures are standardized contracts and are traded on organized exchanges.

      True. This is the main difference between these two types of derivatives.

   b) Future contracts can take only financial assets as the underlying asset.

      No. Future contracts can take a variety of commodities as underlying asset: pork belly, live cattle, sugar lumber, copper, etc.

   c) None of the above.

      No. There is a correct answer.

   d) a and b.

      No the correct answer is only a. Answer b is not correct. Future contracts can take a variety of commodities as underlying asset: pork belly, live cattle, sugar lumber, copper, etc.

   Answer:

   The correct answer is **a**.

7. Which of these options on the same stock should sell at a greater price?

a) A 6-month call option with an exercise price of $40

No. Think about how the exercise price is likely to affect the likelihood of exercise and option value.

b) A 6-month call option with an exercise price of $35

Correct. A call option with a lower exercise price is more likely to finish in the money and be exercised. Therefore, a call option with an exercise price of $35 should sell at a greater price than a call option with the same expiration date but a higher exercise price.

Answer:

The correct answer is **b**.

8. Suppose that a trader enters into a long corn futures position for 5000 bushels with a delivery date on December 2017 and a future price of $3.902 per bushel. What is the payoff to this position if on the delivery date, the spot price of corn is $4.0995 per bushel? Round off your final answer to the nearest dollar.

Answer:

The correct answer is **988**.

Recall that the payoff to the long futures is given by $(P_T - F_0)$

where P_T is the spot price per bushel at delivery date and F_0 is the future bushel.

In this case:

$P_T = 4.0995$

$F_0 = 3.902$

$(4.0995-3.902)*5000 = 987.5$

9. Assuming all other relevant features of the stocks and options are identical, which of these options should sell at a lower price?

a) A put option on a stock with a market price of $50

No, that is not correct. Recall that a put option gives the right to sell the underlying at the exercise price and it will be exercised if the market price is less

than exercise price. For a given exercise price, the lower the market price of the underlying stock, the greater is the likelihood that the put option will be in the money at expiration. So the option should be worth more.

b) A put option on a stock with a market price of $60

Yes, that is correct. Recall that a put option gives the right to sell the underlying at the exercise price and it will be exercised if the market price is less than exercise price. For a given exercise price, the higher the market price of the underlying stock, the less is the likelihood that the put option will be in the money at expiration. So the option would be worth less.

Answer:

The correct answer is **b**.

10. You are a portfolio manager who uses options positions to custom the risk profile of your clients. Your portfolio's performance to date is up 16%. Your client's objective is to earn at least 15%. You expect that there is a good chance of large losses between now and the end of the year. What strategy is best given your client's objective?

a) Long put options

Yes, that is correct. Put options give you the right but not the obligation to sell at the exercise price. Put options therefore provide protection.

b) Short call options

No. A short call option position means that you have written a call option. Think about how this would affect your client's objective if you expect the market to decline.

c) Long call options

No. A long call option position means that you have bought a call option. Think about how this would affect your client's objective if you expect the market to decline.

Answer:

The correct answer is **a**.

11. Suppose you will receive your bonus next month. You hope to invest it in long-term corporate bonds. You believe that bonds are currently selling at quite attractive yields How would you use financial futures to hedge your risk?

    a) Go long in bond futures

       Yes, this is correct. A long hedge eliminates the risk of uncertain purchase price.

    b) Go short in bond futures

       No. This is not correct. A short hedge eliminates the risk of uncertain sales price.

    Answer:

    The correct answer is **a**.

12. Suppose you have just received 10,000 shares of your company stock as part of your compensation package. The stock currently sells $30 a share. You would like to defer selling the stock until the next tax year. In January, however, you will have to liquidate your holdings in order to provide a down payment on your new house. You are therefore worried about the price risk associated with keeping your shares of stock. If the value of your stock holdings fall below $250,000, your ability to come up with the necessary down payment would be jeopardized. On the other hand, if the stock value rises to $350,000, then you might be able to maintain a small cash reserve even after making your down payment. Which of these investment strategies would you choose?

    a) Writing January call options on your company shares with an exercise price $35. These are currently selling for $3 each.

       Think about what this position generates. Essentially you have your shares plus a short call position on the shares. If the stock price increases above $35, then the call option will be exercised and the stock will be called away. You will have $350,000 plus $30,000 in option premium. If the stock price remains below $35 then the option will not be exercised. You will have your shares plus the premium. Note that this position does not provide any downside protection if the value of your stock holdings fall below $250,000.

    b) Buying put options with an exercise price of $25. These options are also selling for $3 each.

       Think about what this position generates. Essentially, you have your shares plus a long put option on the shares. If the stock price does decline below $25 then you will exercise the option and sell your shares for $250,000. You will have

$250,000 less the $30,000 in premium you paid. If the stock price is above $25, then the put options will not be exercised.

c) Establishing a zero-cost collar position by writing the January calls and buying the January puts.

Yes. Think about what this position generates. Essentially, you have your shares plus a zero-cost collar position which enables to guarantee to have the value of your holdings between $250,000 and $350,000. The premium you receive for the call options will pay for the put options. You are able to obtain the downside protection represented by the put option by selling your claim to any upside potential beyond the exercise price of the call.

Answer:

The correct answer is **c**.

13. You have a client who believes that the shares of MexCon, currently trading at $48 per share, could move significantly in either direction in response to an expected court ruling involving the company. Your client currently owns no MexCon shares but asks you for advice to implement a strangle strategy to profit from the possible price movement. A strangle is a portfolio of a put and a call with a higher exercise price but with the same expiration date. Currently, MexCon stock has a 3-month call option with an exercise price of $50 selling for $4, and a 3-month put option with an exercise price of $45 selling for $3. Which of the two strategies would you recommend your client?

a) A long strangle strategy

Yes. That is correct. As long as the stock price moves substantially in either direction, this will generate a positive payoff.

b) A short strangle strategy

No. Think about the payoffs to a short strangle strategy. When would it yield a positive payoff?

Answer:

The correct answer is **a**.

14. Suppose you are an oil distributor planning to sell 100,00 barrels of oil eight months from now. You would like to hedge against a possible decline in oil prices. Which position would you take?

a) A short hedge taking a short futures position

Yes, that is correct. A short futures position offsets the risk in the sale of price of the underlying.

The revenue from the sale of oil eight months from now is 100,000 x P_T.

The profit from the short futures position is 100,000 x ($F_0 - P_T$)

Total proceeds will be 100,000 x F_0

b) A long hedge taking a long futures position

No. A long hedge is a hedge for someone who wishes to eliminate the risk of uncertain purchase price.

Answer:

The correct answer is **a**.

15. Why does a speculator who wants to bet on the direction of the price of an underlying asset buy a futures contract instead of buying the underlying asset itself?

a) Futures contracts require only a fraction of the value to be deposited compared to the value of the asset underlying the contract.

This is correct, but not the only one. Because they only have to pay up only a fraction of the value, futures trading provides much greater leverage to speculators than trading in the underlying asset.

b) Speculators are attracted to futures because the futures market appears more sophisticated.

No. This is not correct.

c) Speculators are not allowed to trade in the underlying asset.

No. This is not correct.

d) Transaction costs in the futures markets are far smaller.

Yes, this is correct, but it is not the only one.

e) a and d

Yes. Both a and d are reasons why futures trading is often preferred to trading in the underlying for speculators.

Answer:

The correct answer is **e**.