0. What does Delta measure ?

rate of change of a stocks price to changes in the price of the option

rate of change of an options price to changes in the implied volatility of the underlying stock

rate of change of a stocks price to changes in its implied volatility

rate of change of an options price to price changes of the underlying stock

1. What does theta measure?

a) The rate of change or delta with the asset price

b) The rate of change of the portfolio value with the passage of time

c) The sensitivity of a portfolio value to interest rate changes

d) None of the above

Answer: B

Theta measures the rate of change in the value of a portfolio with the passage of time.

2. What does gamma measure?

- a) The rate of change or delta with the asset price
- b) The rate of change of the portfolio value with the passage of time
- c) The sensitivity of a portfolio value to interest rate changes
- d) None of the above

Answer: A

Gamma measures the rate of change or delta with the asset price.

3. What does vega measure?

- a) The rate of change or delta with the asset price
- b) The rate of change of the portfolio value with the passage of time
- c) The sensitivity of a portfolio value to interest rate changes
- d) None of the above

Answer: D

Vega measures the rate of change of the value of the portfolio value with volatility.

4. What does rho measure?

- a) The rate of change of delta with the price
- b) The rate of change of the portfolio value with the passage of time
- c) The sensitivity of a portfolio value to interest rate changes
- d) None of the above

Answer: C

Rho measures the rate of change of the value of the portfolio with into residual rate.

5. A call option on a stock has a delta of 0.3. a trader has sold 1,000options. what position should the

Does trader take to hedge and the positioning?

a) Sell 300 shares

b) Buy 300 shares

c) Sell 700 shares

d) Buy 700 shares

Answer: B

When the stock price increases by a small amount, the option price increases by 30% of this amount.

The trader, therefore, has a hedged position if he or she buys 300 shares. For small changes, the gain or

loss on the stock position is equal and opposite to the loss or gain on the option position.

7. The call option on the $15 strike is currently worth $1.02 and has a delta of 0.43.

How much would the call option be worth if the underlying increases by $0.50?

Hint: Remember that options are long Gamma.

- $1.25
- $0.80
- $1.20
- $0.85

8. Which of the following options (on the same expiry) has the largest vega when the stock is trading at 100?

- Put on the 100 strike
- Put on the 120 strike
- Call on the 80 strike
- Call on the 120 strike

9.What happens to the rho of a put option as the underlying moves up?

- Rho increases and is more positive

- Rho stays constant
- Rho decreases and is less positive
- Rho increases and is less negative
- Rho decreases and is more negative

10 . What can we say about the vega of an ATM option?

- The vega is (greatly) increasing as volatility increases
- The vega is (greatly) decreasing as volatility increases
- The vega is (mostly) constant as volatility increases

11. As volatility increases, what happens to the price of an option?

- The price will increase.
- The price will decrease.
- The price will increase for ATMs and decrease for OTM.
- The price will decrease for ATMs and increase for OTM.

12 . When the stock is trading at $115, the put option on the $113 strike with 30 days to expiry is worth $1.34. It has a delta of -0.3357 and a gamma of 0.062.
How much would the put option be worth if the underlying increases to $117?

- $0.793
- $0.669
- $0.917
- $0.545

13 . If the delta of the call on the 30 strikes expiring in May is 0.45, what is the delta of the put on the 30 strikes expiring in June?

- 0.45
- -0.55
- 0.55
- -0.45

14. Suzuki stock is trading around 18.20. The call option on the $18 strike has a gamma of 0.417. What is the gamma of the put on the $18 strike?

- -0.417
- -0.583
- 0.417
- 0.583

1._____ measures an option position's sensitivity to time passing.

- Delta
- Gamma
- Theta
- Vega

3. If a given option has a positive theta, it will have a _____ gamma.

- Positive
- Negative
- Neutral

4. If implied volatility increases, the delta of an out-of-the-money option _____.

- Decreases
- Increases
- Is unaffected

5. As time passes, the theta of an out-of-the-money option _____.

- Increases
- Decreases
- Stays about the same

6. Scenario: A trader owns one 50-strike call, which has a 44 delta. The underlying stock splits 2 for 1. Now the trader owns two 25-strike calls.
Question: What is the delta of each of his calls after the stock split?

22
44
88
Other

7. Scenario: A trader owns one 50-strike call, which has a 0.04 theta. The underlying stock splits 2 for 1. Now the trader owns two 25-strike calls.
Question: What is the theta of each of his calls after the stock split?

0.02
0.04
0.06
0.08
Other

8. As the X-dividend date approaches, some in-the-money call deltas tend to _____.

Rise
Fall
Become negative

9. Calls with more time until expiration has a _____ rho than a corresponding shorter-term call of the same strike.

More negative
More positive
Less negative
Less positive

10. On days of option expiration, why does the stock price tend to stick to option strike prices?

Market maker manipulation
Market expectation
Witching hour
Hedging activities

On days of option expiration, those who are long calls and puts will need to hedge their delta exposure. This applies especially to option market makers, who tend to want to stay delta neutral.

Assume that the stock starts to trade close to a strike (say 100). When the stock goes above 100, then those who are long a call may choose to hedge their exposure by selling stock above 100 (in anticipation of exercising the call). If the stock trades down below 100, then they will not exercise the call, and instead buy back the stock from the market.

A similar situation happens for those who are long the put. When the stock trades below 100, then those who are long a put may choose to hedge their exposure by buying stock below 100 (in anticipation of exercising their put). If the stock trades up above 100, then they will not exercise the put, and instead sell the stock to the market.

Hence, these hedging activities would cause the stock to "stick" towards a strike price leading up to the close, especially if there is a lot of open interest on the strike. There could be slight drift away from this strike price on the next trading day, because there is no longer a need to hedge.

11 . Your theta position is shown to be positive (collecting theta). Is it possible that everything stays the same for 12 hours, but your position loses money?

- Yes, theta is just a snapshot of the moment
- No, collecting theta must have made money
- Yes, theta is only a suggestion
- No, positive theta will always make money