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Exam : **8007**

Title : Exam II: Mathematical Foundations of Risk Measurement - 2015 Edition

Version : DEMO

1.The bisection method can be used for solving f(x)=0 for a unique solution of x, when
A. The function f(x) is continuous and monotonic
B. The function f(x) is differentiable
C. The function f(x) is differentiable and we have an explicit expression for the derivative
D. The function f(x) is continuous
Answer: A

2.Consider a binomial lattice where a security price S moves up by a factor u with probability p, or down by a factor d with probability 1 - p.
If we set d > 1/u then which of the following will be TRUE?
A. The lattice will not recombine
B. The probability of an up move will not be constant
C. There will always be a downward drift in the lattice
D. None of the above
Answer: D

3.Consider an investment fund with the following annual return rates over 8 years: +6%, -6%, +12%, -12%, +3%, -3%, +9%, -9% .
What can you say about the annual geometric and arithmetic mean returns of this investment fund?
A. The arithmetic mean return is zero and the geometric mean return is negative
B. The arithmetic mean return is negative and the geometric mean return is zero
C. The arithmetic mean return is equal to the geometric mean return
D. None of the above
Answer: A

4.Which of the following statements concerning class intervals used for grouping of data is correct?
When grouping data, attention must be paid to the following with regards to class intervals:
1. Class intervals should not overlap
2. Class intervals should be of equal size unless there is a specific need to highlight data within a specific subgroup
3. The class intervals should be large enough so that they not obscure interesting variation within the group
A. Statements 2 and 3 are correct
B. Statements 1 and 2 are correct
C. All three statements are correct
D. Statements 1 and 3 are correct
Answer: B

5.An underlying asset price is at 100, its annual volatility is 25% and the risk free interest rate is 5%. A European call option has a strike of 85 and a maturity of 40 days. Its Black-Scholes price is 15.52. The options sensitivities are: delta = 0.98; gamma = 0.006 and vega = 1.55.
What is the delta-gamma-vega approximation to the new option price when the underlying asset price changes to 105 and the volatility changes to 28%?
A. 17.33

B. 18.75
C. 19.23
D. 20.54
Answer: D