

DUMPS ARENA

Exam II: Mathematical Foundations of Risk Measurement - 2015 Edition

PRMIA 8007

Version Demo

Total Demo Questions: 10

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sales@dumpsarena.co

sales@dumpsarena.co
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QUESTION NO: 1

A biased coin has a probability of getting heads equal to 0.3. If the coin is tossed 4 times, what is the probability of getting heads at least two times?

- A. 0.7367
- B. 0.3483
- C. 0.2646
- D. None of these

ANSWER: B**QUESTION NO: 2**

A 2-year bond has a yield of 5% and an annual coupon of 5%. What is the Macaulay

Duration of the bond?

- A. 2
- B. 1.95
- C. 1.86
- D. 1.75

ANSWER: B**QUESTION NO: 3**

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

QUESTION NO: 4

The correlation between two asset returns is 0.5. What is the largest eigenvalue of their correlation matrix?

- A. 0.5
- B. 1
- C. 1.5
- D. None of the above

ANSWER: C

QUESTION NO: 5

Find the first-order Taylor approximation $p(x)$ for the function: at the point .

- A. $-x$
- B. $-x+1$
- C. $x-1$
- D. $x+1$

ANSWER: B

QUESTION NO: 6

Consider two securities X and Y with the following 5 annual returns:

X: +10%, +3%, -2%, +3%, +5%

Y: +7%, -2%, +3%, -5%, +10%

In this case the sample covariance between the two time series can be calculated as:

- A. 0.40729
- B. 0.00109
- C. 0.00087
- D. 0.32583

ANSWER: B

QUESTION NO: 7

Suppose we perform a principle component analysis of the correlation matrix of the returns of 13 yields along the yield curve. The largest eigenvalue of the correlation matrix is 9.8. What percentage of return volatility is explained by the first component? (You may use the fact that the sum of the diagonal elements of a square matrix is always equal to the sum of its eigenvalues.)

- A. 64%
- B. 75%
- C. 98%
- D. Cannot be determined without estimates of the volatilities of the individual returns

ANSWER: B

QUESTION NO: 8

In a quadratic Taylor approximation, a function is approximated by:

- A. a constant
- B. a straight line
- C. a parabola
- D. a cubic polynomial

ANSWER: C

QUESTION NO: 9

An operational risk analyst models the occurrence of computer failures as a Poisson process with an arrival rate of 2 events per year. According to this model, what is the probability of zero failures in one year?

- A. 0.02
- B. 0.14
- C. 0.25
- D. 0.50

ANSWER: B**QUESTION NO: 10**

You work for a brokerage firm that charges its client x per share. The volume of trade of a client of type A depends on the per share commission in the following manner. If the commission is x , the client of type A will trade e^{-ax} shares on average each week. What is the optimal commission x that maximizes the income from client A, noting that a is greater than zero?

- A. 1
- B. a
- C. $4a$
- D. a^2

ANSWER: C