



Bookmarks

- ▶ [Module 1: The Basics of R and Introduction to the Course](#)
- ▶ [Entrance Survey](#)
- ▶ [Module 2: Fundamentals of Probability, Random Variables, Distributions, and Joint Distributions](#)
- ▶ [Module 3: Gathering and Collecting Data, Ethics, and Kernel Density Estimates](#)
- ▶ [Module 4: Joint, Marginal, and Conditional Distributions & Functions of Random Variable](#)

Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression > Expectation, Variance, and an Introduction to Regression > Covariance and Correlation - Quiz

Covariance and Correlation - Quiz

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Question 1

1 point possible (graded)

True or False: The more closely that two variables are related, the higher the covariance.

☒ a. True ❌

☐ b. False ✅

Explanation

False. Covariance captures the strength of the relationship between two random variables; but it is also a function of the variances of the random variables and whether positively or negatively related.

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You have used 1 of 1 attempts

Question 2


1/1 point (graded)

▼ **Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression**


Moments of a Distribution and Auctions

Finger Exercises due Oct 31, 2016 at 05:00 IST 

Expectation, Variance, and an Introduction to Regression

Finger Exercises due Oct 31, 2016 at 05:00 IST 

Module 5: Homework

Homework due Oct 24, 2016 at 05:00 IST 

► **Exit Survey**

Suppose X is a random variable and Y is a function of X depicted in the graphs below (where X is on the horizontal axis and Y is on the vertical). For which of the following graphs would X and Y be positively correlated? (Select all that apply)

A



B



C



D



☒ a. Graph A 

☐ b. Graph B

☐ c. Graph C

☒ d. Graph D ✓



Explanation

The graphs depicted in A and D show the relationship between two variables that are positively correlated.

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You have used 1 of 2 attempts

✓ Correct (1/1 point)

Question 3

1/1 point (graded)

Which of the following statements are true? (Select all that apply.)

☒ a. If two variables X and Y are independent, then the covariance, σ_{XY} , and the correlation, ρ_{XY} , are equal to zero ✓

☐ b. Correlation ranges between 0 and 1

☐ c. For positively correlated variables X and Y, ρ_{XY} is close to 1

☒ d. ρ_{XY} is greater than zero for two positively correlated variables ✓

**Explanation**

A and D are correct. If two variables are independent, or uncorrelated, then their covariance and correlation are both equal to zero. If two variables are negatively correlated, then correlation is less than zero and if positively correlated, then correlation is greater than zero.

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✓ Correct (1/1 point)

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