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Joint PDFs - Quiz

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Question 1

1/1 point (graded)

True or False: Joint PDFs must integrate to 1.

☒ a. True ✓

☐ b. False

Explanation


This is true. One of the properties of a joint PDF is that it must integrate to 1.

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✓ Correct (1/1 point)


Joint, Marginal, and Conditional Distributions

Finger Exercises due Oct 24, 2016 at 05:00 IST 

Functions of Random Variables

Finger Exercises due Oct 24, 2016 at 05:00 IST 

Module 4: Homework

Homework due Oct 17, 2016 at 05:00 IST 

- ▶ Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression
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Question 2

1/1 point (graded)

Solve for c in the following joint PDF.

Please give your answer to the second decimal place (For example, if your answer was 2.5432, you would round to 2.54 and if it is 2.5467, you would round to 2.55).

$$f_{XY}(x, y) = \begin{cases} cxy, & 0 < y < 1 \text{ and } 1 < x < 2 \\ 0, & \text{otherwise} \end{cases}$$

✓ Answer: 1.33

Explanation

This example is similar to the example discussed in class. To solve for c, take the double integral over the support and set equal to 1.

$$\int_0^1 \int_1^2 cxy \, dx \, dy = 1$$

$$\int_0^1 cy \left(\frac{x^2}{2} \Big|_{x=1}^{x=2} \right) dy = 1$$

$$\int_0^1 \frac{3}{2} cy \, dy = 1$$

$$\frac{3c}{4} y^2 \Big|_{y=0}^{y=1} = 1$$

$$\frac{3c}{4} = 1$$

$$c = 4/3$$

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✓ Correct (1/1 point)

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