

Advanced Statistics

F22 Data Science (Afternoon)

Quiz 03

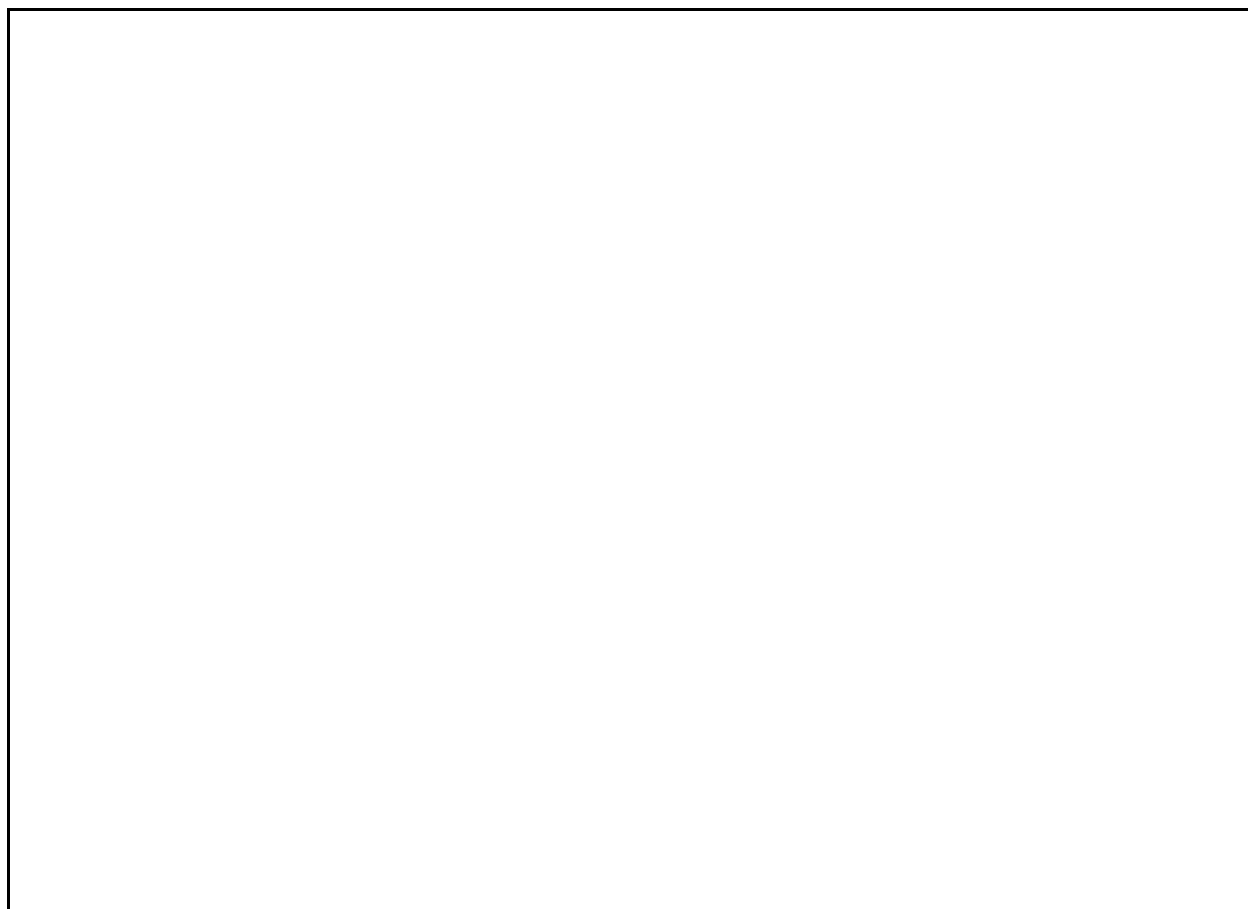
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Note: Quiz has three questions.

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1. Find $E(Y|X)$ for the density function.

$$f(x) = \begin{cases} \frac{x(1+3y)^2}{4} & , 0 < x < 2, 0 < y < 1 \\ 0, & elsewhere \end{cases}$$



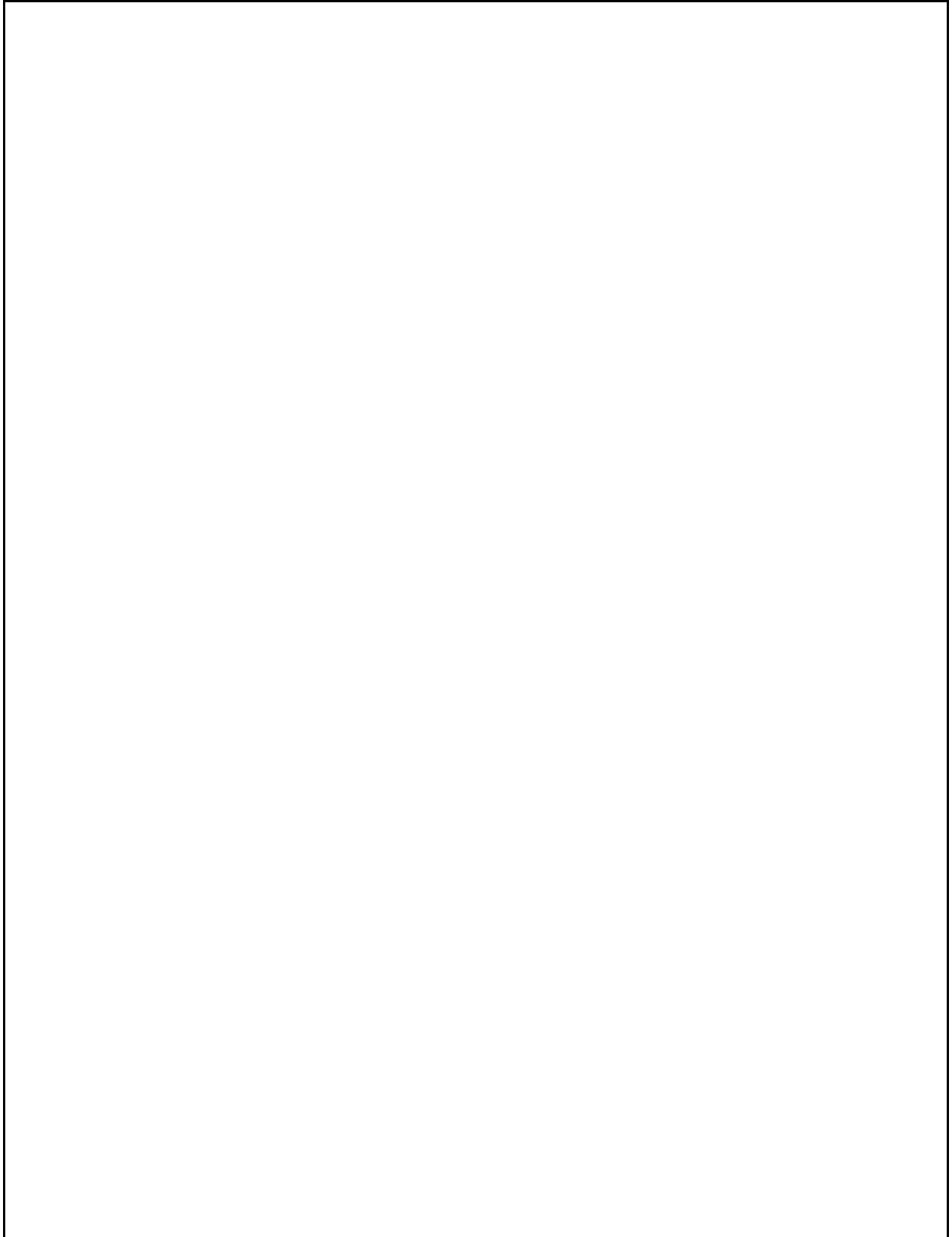
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2. Given the joint density function

$$f(x, y) = \begin{cases} \frac{6 - x - y}{8}, & 0 < x < 2, 2 < y < 4 \\ 0, & \text{elsewhere} \end{cases}$$

Find $P(1 < Y < 3 \mid X = 1)$.





1. Suppose that X and Y have the following joint probability distribution:

		x	
		2	4
y	$f(x, y)$		
	1	0.10	0.15
	3	0.20	0.30
	5	0.10	0.15

- (a) Find the marginal distribution of X.
- (b) Find the marginal distribution of Y.

