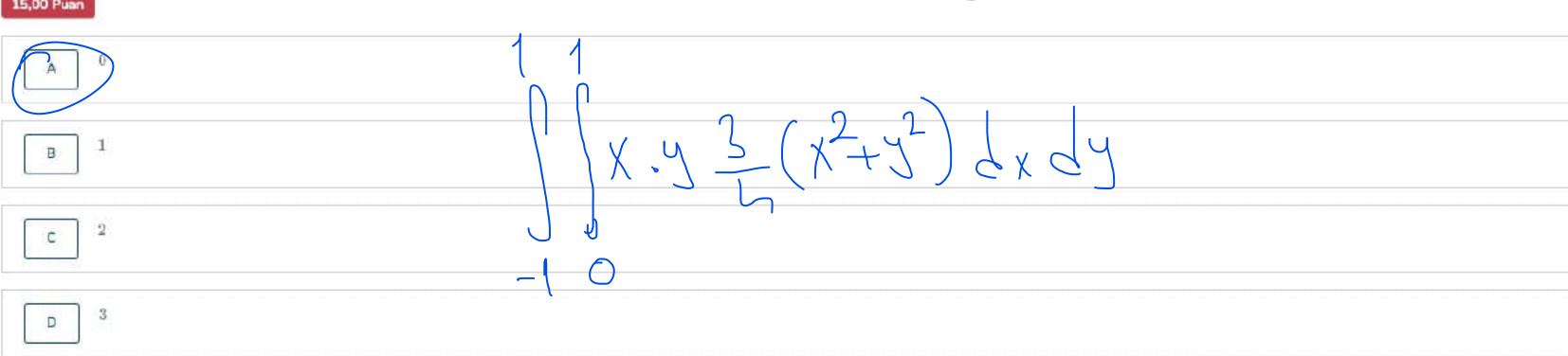
Two continuous random variables X and Y have the joint density $f_{X,Y}(x,y) = \frac{3}{4} \left(x^2 + y^2\right)$ if -1 < x < 1 and 0 < y < 1. Otherwise $f_{X,Y}(x,y) = 0$.

Find the expected value of the product, i.e., $\mathbb{E}[XY]=?$.

Soruyu boş birakmak isterseniz işaretlediğiniz seçeneğe tekrar tıklayınız.

morandant ETX7. E[4].



Let us given two random variables X and Y whose joint PDF is given by

 $f_{X,Y}(x,y) = egin{cases} x+y, & ext{for } 0 \leq x \leq 1 ext{ and } 0 \leq y \leq 1 \ 0, & ext{elsewhere} \end{cases}$

Find the joint CDF of X and Y, i.e., $F_{X,Y}(x,y) = ?$.

Soruyu boş bırakmak isterseniz işaretlediğiniz seçeneğe tekrar tıklayınız.

15,00 Puan

 $F_{X,Y}(x,y) = \begin{cases} 1, & \text{for } x > 1 \text{ and } y > 1 \\ \frac{x^2y}{2} + \frac{xy^2}{2}, & \text{for } 0 \le x \le 1 \text{ and } 0 \le y \le 1 \\ 0, & \text{for } x < 0 \text{ and } y < 0 \end{cases}$

B $F_{X,Y}(x,y) = \begin{cases} 1, & \text{for } x > 1 \text{ and } y > 1 \\ \frac{x^2y}{2} + \frac{xy^2}{2}, & \text{for } 0 \le x \le 1 \text{ and } 0 \le y \le 1 \\ 0, & \text{for } x < 0 \text{ or } y < 0 \end{cases}$

 $F_{X,Y}(x,y) = \begin{cases} 1, & \text{for } x > 1 \text{ or } y > 1 \\ \frac{x^2y}{2} + \frac{xy^2}{2}, & \text{for } 0 \le x \le 1 \text{ and } 0 \le y \le 1 \\ 0, & \text{for } x < 0 \text{ or } y < 0 \end{cases}$

X+Y dy dx

 $\frac{x^2}{2} + \frac{Jx}{2}$

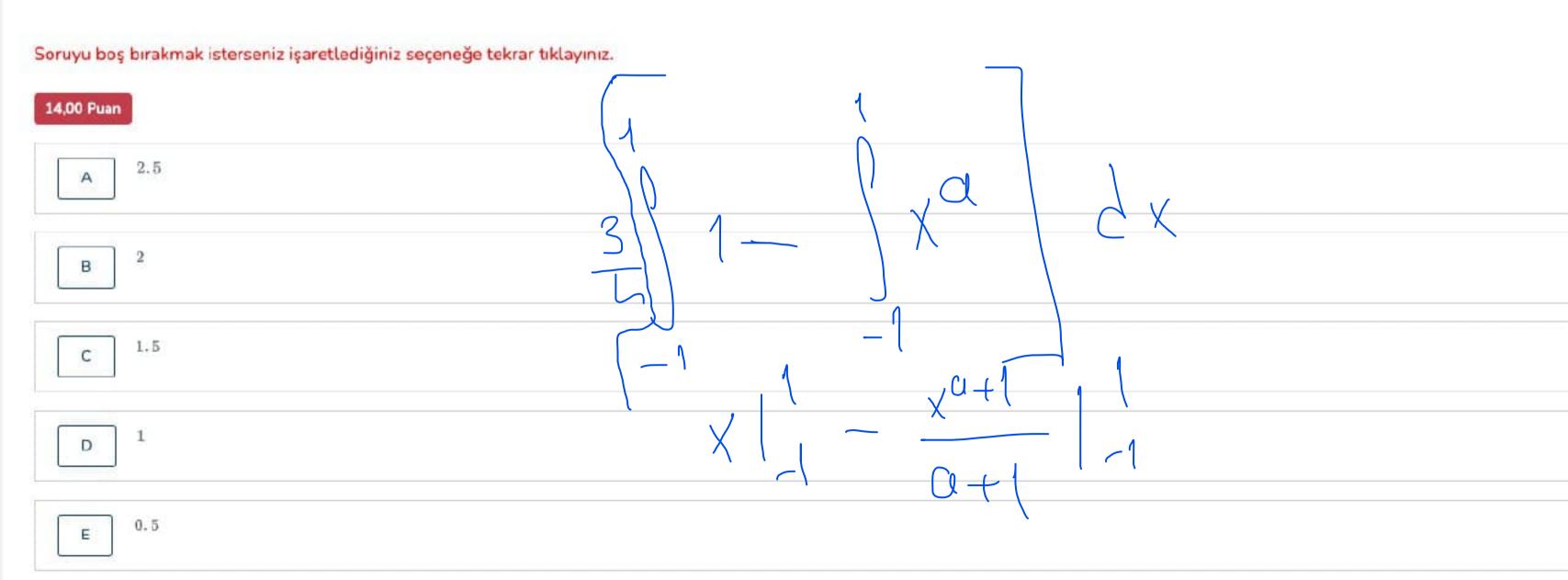
x2y 2 2

None of them.

A random variable \boldsymbol{X} follows the PDF given by

$$f_X(x) = egin{cases} rac{3}{4} \left(1 - x^a
ight), & ext{if} \quad -1 \leq x \leq 1 \ 0, & ext{elsewhere} \end{cases}$$

Find the value of the parameter "a".



Let us assume we are given a random variable X whose CDF is given by

$$F_X(x) = egin{cases} 0, & ext{if } -1 {<} \, x \ 1/2, & ext{if } -1 {\le} \, x {<} 0 \ (1+x)/2, & ext{if } 0 {\le} \, x {<} 1 \ 1, & ext{if } 1 {\ge} \, x \end{cases}$$

Accordingly, find Pr(X = 1).

Soruyu boş bırakmak isterseniz işaretlediğiniz seçeneğe tekrar tıklayınız.

14,00 Puan

A 0.5

в 0.4

c 0.2

D 0.1

Let X be a random variable. We have expected value $\mathbb{E}[X]=20$ and variance $\mathrm{var}(X)=25$. Which of the following is certainly true?

Soruyu boş bırakmak isterseniz işaretlediğiniz seçeneğe tekrar tıklayınız.

14,00 Puan

A $\Pr(|X - 30| > 10) \le 0.20$

Pr(/x-E[x]) { Vor(x)

 $Pr(|X-20|>10) \le 0.25$

c $\Pr(|X - 30| > 10) \le 0.05$

 $f(x-20)d) \leq \frac{25}{6}$

D $\Pr(|X - 20| > 10) \le 0.95$

E $\Pr(|X - 30| > 10) \ge 0.25$

Let us be given a joint Cumulative Distribution Function (CDF) for two random variables X and Y, that is

$$F_{X,Y}(x,y) = egin{cases} 1 - rac{1}{x^2y^2}, & ext{for } x \geq 1 ext{ and } y \geq 1 \ 0, & ext{elsewhere} \end{cases}$$

Which one of the following is correct about this joint distribution?

Soruyu boş bırakmak isterseniz işaretlediğiniz seçeneğe tekrar tıklayınız.

14,00 Puan

- A It is a valid CDF.
- B It is not a valid CDF.
- $F_{X,Y}(\infty,\infty)=1$
- $P_{X,Y}(-\infty,-\infty)=0$

E None of them is correct.

A soccer player converts 0.1 of kicks to goals, independently of any other goal kick. What is the probability that in a series of 3 goal kicks, at most one will be a goal?

Soruyu boş bırakmak isterseniz işaretlediğiniz seçeneğe tekrar tıklayınız. 0.582 0.618 0.716 0.832