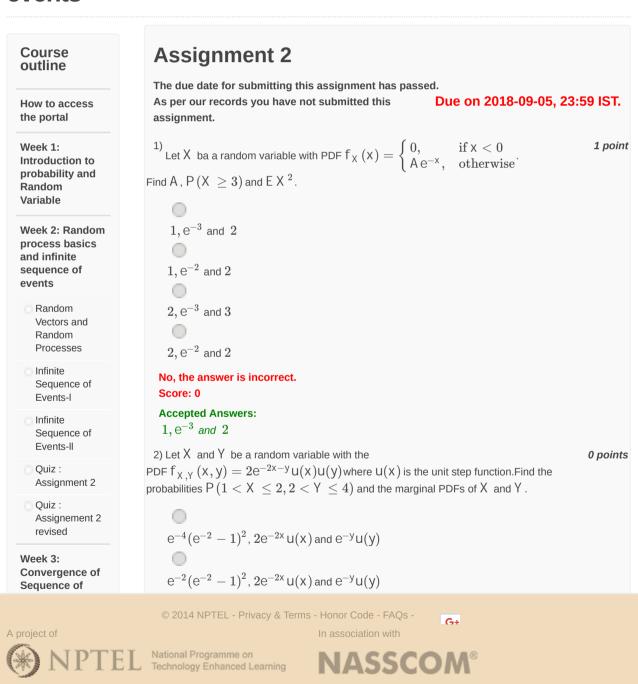


Announcements **Course** Ask a Question Progress Mentor FAQ

## Unit 3 - Week2: Random process basics and infinite sequence of events



Week 5: Markov Chain

Week 6:Discrete Time Markov Chain

Week 7: Continuous Time Markov Chain

Week 8: Martingle Process

New Unit

Assignment Solutions

Score: 0

**Accepted Answers:** 

$$e^{-4}(e^{-2}-1)^2$$
,  $2e^{-2x}u(x)$  and  $e^{-y}u(y)$ 

3) Recall the joint PDF of a two dimensional

1 point

Gaussian 
$$f_{X,Y}(x,y) = \frac{1}{2^{-1}} \left[ \frac{(x-\mu_1)^2}{2^{(1-2)}} \left[ \frac{(x-\mu_1)^2}{2^2} - 2 \cdot \frac{(x-\mu_1)(y-\mu_2)}{1 \cdot 2} + \frac{(y-\mu_2)^2}{2^2} \right] \right]$$
. Now consider a two

dimensional Gaussian  $f_{X,Y}\left(x,y\right)=\frac{5}{8}$   $e^{\frac{-25}{32}\left[x^2-\frac{6}{5}xy+y^2\right]}$ . Find E[X], E[Y], X, X, Y, and the conditional expectation E[Y]

- 1, 1, 2, 2, 2/5, 9/5
- 0, 0, 1,1, 3/5 and -9/5
- 0, 0, 1,1, 3/5 and 9/5
- 0, 0, 1,1, -3/5 and -9/5

No, the answer is incorrect.

Score: 0

**Accepted Answers:** 

0, 0, 1,1, 3/5 and -9/5

- 4) Suppose X and Y are two random variables with the means E X  $= \frac{7}{4}$ , E Y  $= \frac{5}{4}$ , mean square values E X  $^2 = 5$ , E Y  $^2$  and the correlation E X Y = 2. Find the values of  $_{X}^{2}$ ,  $_{Y}^{2}$  and COV(X , Y ). Are X and Y independent?
  - 31/16, 23/16, -3/16 and dependent
  - 31/16, 23/16, -3/16 and independent
  - 23/16. 23/16. -3/16 and dependent
  - 31/16, 23/16, 3/16 and dependent

No, the answer is incorrect.

Score: 0

**Accepted Answers:** 

31/16, 23/16, -3/16 and independent

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