

ENEE2307
Online Quiz Ch2

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Question 1

Correct

Mark 5.00 out of 5.00

Flag question

Let $f_X(x)$ be the probability density function of the random variable X .

$$f(x) = \begin{cases} (2/6^2) x, & 0 \leq x \leq 6; \\ 0, & \text{otherwise.} \end{cases}$$

Compute $F_X(2.7)$

Answer:

0.2025



The correct answer is: 0.20250

Question 2

Correct

Mark 5.00 out of 5.00

Flag question

Let $f_X(x)$ be the probability density function of the random variable X .

$$f(x) = \begin{cases} \frac{3}{(4)^3 - (-3)^3} x^2, & -3 \leq x \leq 4; \\ 0, & \text{otherwise.} \end{cases}$$

Determine the mean of X .

Answer:

1.4423 ✓

The correct answer is: 1.44231

Question 3

Correct

Mark 5.00 out of 5.00

Flag question

Let $f_X(x)$ be the probability density function of the random variable X.

$$f(x) = \begin{cases} (2/10^2) x, & 0 \leq x \leq 10; \\ 0, & \text{otherwise.} \end{cases}$$

Find the mode of the distribution of X.

Answer:

10



The correct answer is: 10.00000

Question 4

Incorrect

Mark 0.00 out of 5.00

Flag question

The lifetime X of a certain electronic component is an exponential random variable with a mean of 9 hours. Assuming 2 of these components operate independently in a device. The device operates if all components operate. Find the probability that the device operates for at least 3 hours.

Answer:

0.11969 ✘

The correct answer is: 0.513417

Question 5

Incorrect

Mark 0.00 out of 5.00

Flag question

A multiple-choice exam contains 52 questions, each with 4 options (one is the correct answer). Assume that a student, who did not study well on the exam, decided to just guess on each answer. To pass the exam, a student must answer at least 22 questions correctly. Use the normal approximation to find the probability that a student will pass the exam?

Answer:

0.00275 ✘

The correct answer is: 0.001961

Question 1

Correct

Mark 5.00 out of 5.00

🚩 Flag question

Let X be a random variable with a uniform distribution over the interval $[-5, 3]$. Determine the variance of X .

Answer:

5.33333 ✓

The correct answer is: 5.333333

Question 2

Correct

Mark 5.00 out of 5.00

Flag question

Let X be a random variable that follows the normal distribution with $\mu_X = 3.7$ and $\sigma_X^2 = 4$. Compute $P(X \leq 0.1)$.

Probabilities for the standa

Probability

Table entry for z is the probability lying to the left of z

z	.00	.01	.02	.03	.04
0.0	0.5000	0.5040	0.5080	0.5120	0.5160
0.1	0.5398	0.5438	0.5478	0.5517	0.5557
0.2	0.5793	0.5832	0.5871	0.5910	0.5948
0.3	0.6179	0.6217	0.6255	0.6293	0.6331
0.4	0.6554	0.6591	0.6628	0.6664	0.6700
0.5	0.6915	0.6950	0.6985	0.7019	0.7054
0.6	0.7257	0.7291	0.7324	0.7357	0.7389
0.7	0.7580	0.7611	0.7642	0.7673	0.7704
0.8	0.7881	0.7910	0.7939	0.7967	0.7995
0.9	0.8159	0.8186	0.8212	0.8238	0.8264
1.0	0.8413	0.8438	0.8461	0.8485	0.8508
1.1	0.8643	0.8665	0.8686	0.8708	0.8729
1.2	0.8849	0.8869	0.8888	0.8907	0.8925
1.3	0.9032	0.9049	0.9066	0.9082	0.9099
1.4	0.9192	0.9207	0.9222	0.9236	0.9251
1.5	0.9332	0.9345	0.9357	0.9370	0.9382
1.6	0.9452	0.9463	0.9474	0.9484	0.9495
1.7	0.9554	0.9564	0.9573	0.9582	0.9591
1.8	0.9641	0.9649	0.9656	0.9664	0.9671
1.9	0.9713	0.9719	0.9726	0.9732	0.9738
2.0	0.9772	0.9778	0.9783	0.9788	0.9793
2.1	0.9821	0.9826	0.9830	0.9834	0.9838
2.2	0.9861	0.9864	0.9868	0.9871	0.9875
2.3	0.9893	0.9896	0.9898	0.9901	0.9904
2.4	0.9918	0.9920	0.9922	0.9925	0.9927
2.5	0.9938	0.9940	0.9941	0.9943	0.9945
2.6	0.9953	0.9955	0.9956	0.9957	0.9959
2.7	0.9965	0.9966	0.9967	0.9968	0.9969
2.8	0.9974	0.9975	0.9976	0.9977	0.9977
2.9	0.9981	0.9982	0.9982	0.9983	0.9984
3.0	0.9987	0.9987	0.9987	0.9988	0.9988
3.1	0.9990	0.9991	0.9991	0.9991	0.9992
3.2	0.9993	0.9993	0.9994	0.9994	0.9994
3.3	0.9995	0.9995	0.9995	0.9996	0.9996
3.4	0.9997	0.9997	0.9997	0.9997	0.9997

Answer:

0.0359



Question 3

Correct

Mark 5.00 out of 5.00

🚩 Flag question

Let X be a random variable that follows the normal distribution with a mean of 3.9 and a standard deviation of 3. Compute $E\{x^2\}$.

Answer:

24.21



The correct answer is: 24.210000