

<u>Course</u> > <u>Week 6</u>... > <u>6.12 Pr</u>... > Proble...

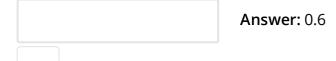
Problem Set 6

1

0.0/2.0 points (graded)

If X follows Bernoulli distribution B_p , p>0.5 and $V\left(X
ight)=0.24$, calculate the following:

• p



• *E*[*X*]



Submit

You have used 0 of 4 attempts

1 Answers are displayed within the problem

2

0.0/3.0 points (graded)

A biased coin with probability 0.6 to land on head is flipped 6 times, calculate the probability of

• exactly two heads,

Answer: 0.13824
at most one tail,
Answer: 0.23328
• even number of heads.
Answer: 0.50032
Submit You have used 0 of 4 attempts 3 Answers are displayed within the problem
3 0.0/1.0 point (graded) Which of the following holds for all continuous probability distribution function $f(x)$
having support set \mathbb{R} ?
$lacksquare orall x \in \mathbb{R}, f(x) \geq 0$
$lacksquare \ \forall x \in \mathbb{R}, f(x) \leq 1$
$lacksquare \exists x \in \mathbb{R}, f(x) \leq 1$
$lacksquare \lim_{x o\infty}f(x)=\lim_{x o-\infty}f(x)=0$

1 Answers are displayed within the problem

4

0.0/2.0 points (graded)

Assume the lifetimes of some kind of batteries follow exponential distribution with mean 1 year.

• What is the probability that one such batteries can be used for more than 1.5 years?

Answer: 0.22313

• What is the probability that one such batteries can be used for more than 1.5 years if it has already been used for 0.5 year?

Answer: 0.367879

Submit

You have used 0 of 4 attempts

1 Answers are displayed within the problem

5

0.0/3.0 points (graded)

If X is a normal random variable with $\mu=-2$ and $\sigma=3$, and has probability density function and cumulative density function $f_X\left(x\right)$, $F_X\left(x\right)$, calculate

• P(-3 < X < 0)

	Answer: 0.378066
• $F(1/4)$	
	Answer: 0.773373
• $F^{-1}(1/4)$	
	Answer: -4.02347
Submit You have used	d 0 of 4 attempts
1 Answers are displayed	d within the problem

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