

1. Golfer A misses his 6-foot putts 60% of the time and golfer B misses her 6-foot putts 40% of the time. One of the golfers is chosen at random. What is the probability that the golfer makes the 6-foot putt? If the putt is made, what is the probability that golfer B was the randomly chosen golfer that made the putt?
2. X has pdf $f(x) = k(x^2 - x^3)$, $0 < x < 1$. Find k to make this a valid pdf.
3. Random variable X has pdf:

x	-1	0	1	2	4	6	8
$f(x)$	0.10	0.15	0.20	0.15	0.10	0.15	0.05

Find the mean and variance of X . Find the probability that X is even. Find $\mathbb{P}(X > 2 \mid X > 0)$.

4. Random variable X has pdf $f(x) = 2x$, $0 < x < 1$.
 - (a) Find the cumulative distribution function $F(x)$.
 - (b) Find the moment generating function $M_X(t)$.
 - (c) Find the mean and variance of X .
 - (d) Find $\mathbb{P}(X > 1/2)$.
 - (e) Find the pdf of $1 - X^2$.
5. The joint distribution of X and Y is given in the table below:

		X	
		0	1
Y	0	.1	.3
	1	.25	.15
	2	.05	.15

- (a) Find the marginals of X and Y .
 - (b) Are X and Y independent? Justify.
 - (c) Find the correlation of X and Y .
6. The length of life of an electronic component has an exponential probability density function with a mean of 1000 hours.
 - (a) Find the probability that a component lasts at least 1500 hours.
 - (b) Suppose a component has been in operation for 1000 hours. What is the probability that it will last for another 500 hours?

Also look at previous review sheets and tests!

Final Exam: Wednesday, May 7, 10:00am