

Quiz 2

Student Name:

1. True or False

- a) The random variable X that represents the length of a rod randomly chosen from a day's production is a discrete random variable (T or F) --continuous
- b) Let X represent the number of tires with low air pressure on a randomly chosen car. Its probability mass function of X can be the following (T or F) ---probabilities added to a number larger than one

	X				
	0	1	2	3	4
p(x)	0.1	0.3	0.3	0.2	0.2

- c) Two dice are rolled. Let X=1 if the dice come up doubles and let X=0 otherwise Let Y=1 if the sum is 6, and let y=0 otherwise. X and Y are independent (T or F) --- there are overlapping (when you got 3 and 3 on each of dice, it is X as well as Y
- d) At a certain airport, 75% of the flight arrive on time. A sample of 10 flights is studied. The probability that all of the flights were on time is 0.0563 (T or F) ---Bin(10, 0.75)

2. A fair die is rolled 8 times. What is the probability that the die come up 6 exactly twice: ---Bin(8, 1/6)

- a) 0.2605
- b) 0.1555
- c) 0.3605
- d) None of the above

3. A general contracting firm experiences cost overruns on 20% of its contracts. In a company audit, 20 contracts are sampled at random. What is the mean number that experience cost overruns – mean=np

- a) 2
- b) 4
- c) 3
- d) 5

4. The number of cars arriving at a given intersection follows a Poisson distribution with a mean rate of 4 per second. What is the probability of more than 3 cars arrive in a period of 2 seconds? – $P(X>3)=1-P(X=1)-P(X=2)-P(X=3)$

- a) 0.8976
- b) 0.9576
- c) 0.0655
- d) 0.2566

5. Grandma is trying out a new recipe for raisin bread. Each batch of bread dough makes four loaves, and each loaf contains 10 slices of bread. How many raisins must she put in at least so that the probability that a randomly chosen slice will have no raisins is 0.01? ---Poisson(0, x/40) <=0.01

- a) 184
- b) 185
- c) 186
- d) 190