

Math 10B with Professor Stankova

Quiz 7; Tuesday, 3/12/2019

Section #203; Time: 11 AM

GSI name: Roy Zhao

Name: _____

Circle True or False or leave blank. (1 point for correct answer, -1 for incorrect answer, 0 if left blank)

1. True False The geometric distribution assumes that trials are dependent (without replacement) while the binomial distribution assumes that trials are independent.
2. True False If f is the PMF of a random variable X , it is possible for $f(E[X]) = 0$.

Show your work and justify your answers. Please circle or box your final answer.

3. (10 points) (a) (3 points) I am fishing and the number of spots each fish has is Poisson distributed with an average of 0.5 spots per fish. What is the probability that in a group of 12 fish, they have a total of 8 spots total?

- (b) (4 points) Now suppose I catch 30 random fish and on average, I expect that 10 are striped. If there are 100 total striped fish in the pool, how many total fish are there?

- (c) (3 points) With the same numbers as part (b), suppose that I catch 10 fish. What is the probability that amongst them, 3 of them have stripes?