

Name: _____

Date: 3/10/2025

Math 130

Quiz 8

Some formulas you may need:

$$P(X = x) = {}_n C_x p^x q^{n-x}$$

$$EV = \mu = np$$

$$\sigma^2 = npq$$

$$\sigma = \sqrt{npq}$$

1. (2, 2, 3, 1, 2 points) John the gambler loves betting on green in the game of roulette. Suppose John is about to bet on green 10 times in a row. Let X denote the total number of times he wins among the 10 spins.

a) List the 7 things you are supposed to list when dealing with this kind of random variable.

b) What is the probability that John will win exactly 3 times?

c) What is the probability that John will win at most 2 times?

d) What is the probability that John will win more than 2 times?

e) Find the expected value of the random variable in this problem and explain its meaning.