

NAME:

BRONX COMMUNITY COLLEGE
of the City University of New York
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MTH23

Quiz 3 Sample

Instructions

Do all problems. If necessary, use additional paper to write your solutions. Label your answers clearly. You may refer to a single sheet of paper with notes. You may use a calculator or laptop to help with calculations. Be sure to write all formulas used in solving the problems. Use the proper symbols for all statistics.

1. (30 points) You are to draw two balls, without replacing them, from an urn that holds 6 balls, 4 yellow and 2 blue. Draw a tree diagram for this experiment, with a branch for each outcome at each stage, labeled by the color of that ball. By also labeling each branch with its probability, calculate the probability that you will draw two balls with the same color.
2. (30 points) A discrete random variable, x , has a probability distribution given by $P(1) = 0.2$, $P(2) = 0.3$, $P(3) = 0.4$, $P(4) = 0.1$. Calculate the expected value and standard deviation for this distribution.
3. (20 points) A. A basketball team consists of five positions: center, point guard, shooting guard, small forward, and power forward. How many ways can a starting basketball team be chosen from a roster of nine players, by assigning a particular position to every player?
B. How many ways can a starting basketball team be chosen from the same 9 players if individual positions are not given?
4. (20 points) A binomial experiment consists of flipping a coin 7 times. what is the probability that exactly five flips will be heads?