

Mathematics 132
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Name: _____

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EXAM 2

Problem 1 Mary has 3 nickels, 2 dimes and 4 quarters in her pocket. She pulls out two coins. What is the probability that she got a nickel and a dime?

Problem 2 A bowl contains six red balls and three white balls. Consider the following game. Draw two balls from the bowl. If both are white the player gets \$5. If one is red and one is white, the player gets \$1. If both are red, the player must pay \$2. What is the expected value of this game?

Problem 3 Five letters are placed in three mailboxes. What is the probability that one box is left empty?

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Problem 4 All 180 students in a class took math and history. Of these, 15 failed history only, 10 failed math only and 5 failed both. Find the probability that a student chosen at random from this class:

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a) Failed history and passed math.

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b) Passed both courses.

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Problem 5 Suppose you roll two dice and the sum is 8. What is the probability that you have a pair of 4-s?

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Problem 6 There are 1000 students in a school, 400 are boys. Before a Friday dance, Sally interviewed 30 boys and 30 girls about their intentions. Of these, 15 boys and 20 girls were planning to attend and 15 boys and 10 girls were not. Based on this survey:

a) How many girls would you expect at the dance?

b) How many students will not attend the dance?

Problem 7 Draw a histogram of throwing two dice. Let the sum of the faces be on the horizontal axis and the probability on the vertical axis.

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Problem 8 The raw data of an exam are as follows:

83, 69, 97, 72, 88, 76, 77, 67, 88, 97, 80, 95, 80, 88, 69, 83, 81.

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Make a histogram using these numbers and compute the mean and the median.

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Problem 9 A bowl contains six red and three white marbles. Three marbles are drawn (without replacement). Let W denote the number of white marbles among the three drawn. Find the probabilities for $W = 0$, $W = 1$, $W = 2$, and $W = 3$.

Problem 10 Two cards are drawn from a standard deck of 52 cards. What is the probability that we get two red cards or two jacks?