

MATH 133 PROBLEM SET 5

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ABSTRACT. Due Wednesday, March 29

Question 1. What is the probability that there are exactly 600 heads in 1000 coin tosses? What is the probability that there are *at least* 600 heads in 1000 coin tosses?

Question 2. How many different five card hands (out of a standard 52 card deck) have two pair? A full house? A flush?

Question 3. How many ways are there to color a set of 10 elements with 4 colors (red, white, blue, green), so that exactly 2 elements are painted green?

Question 4. How many ways are there to put letters numbered $1, \dots, n$ into envelopes numbered $1, \dots, n$ so that exactly 3 letters are in the envelopes with the same number?

Key words and phrases. discrete, mathematics, sets, logic, combinatorics, graphs.