Homework 10 Chapter 17 (Problems 1 to 6) Due on April 7 Math 125 Kovitz Spring 2025

1. In the game of Monopoly, a player rolls two dice, counts the total number of spots, and moves that many squares.

On any given turn, what is the expected number of squares he will move?

- 2. Thirty-six draws are going to be made at random with replacement from the box 2 6 8 9 10 13 15 .
 - (a) Find the expected value and standard error for the sum.
 - (b) The sum of the draws will be around _____, give or take _____ or so.
 - (c) Suppose you had to guess what the sum was going to be? What would you guess? Would you expect to be off by around 2, 4, 24, or 144?
- 3. Four hundred draws will be made at random with replacement from the box

50%

$$1 \ 6 \ 7 \ 9 \ 9 \ 10 \ .$$

- (a) How small can the sum of the draws be? How large?
- (b) The sum is between 2760 and 2840 with a chance of about

10%

Explain.

4. A die is rolled 720 times.

Someone figures the expected number of fours as $720 \times 1/6 = 120$, and the SE as $\sqrt{720} \times \sqrt{1/6 \times 5/6} = 10$.

90%

99%

Is this right? Answer yes or no, and explain.

1%

The 720 rolls resulted in 167 fours. Is this a typical result or is it somewhat out of the ordinary? Explain your conclusion.

5. A multiple-choice quiz has 50 questions. Each question has 3 possible answers, one of which is correct. Two points are given for each correct answer, but a point is taken off for a wrong answer.

The passing score is 10. If a student answers all the questions at random, what is the approximate chance of passing? (Ignore any continuity correction.)

6. Three hundred draws are going to be made at random with replacement from the box 0 0 0 1.
box 0 0 0 1.
box 0 0 0 1.
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