MATH230 Week 5 Worksheet - Probability

Review of last week

1: There are 252 ways to place 1 red dot, 2 blue dots, and n green dots on a line in some order. Because this is neither a philosophy nor an art class, every same color dot is identical. Find n.

2: Pretend the entire universe has only 45 balls and n bags. Every bag contains a different number of balls. What's the maximum possible value of n?

3: How many possible standard Tic-Tac-Toe games end in a draw?

This week's material

4: A fair coin lands on heads 5 times in a row. With what probability does it land on heads again?

5: Roll a standard 6 sided die 4 times and take the product of the 4 values. What's the probability that the product is divisible by 3?

6: A deck of 4 cards numbered 1-4 is randomly shuffled. What's the probability that all 3 pairs of adjacent cards are more than 1 apart in difference?

7: Four people randomly decide to each walk in one of the four cardinal directions: north, east, south, or west. What is the probability that each person walks in a different direction?

If you have nothing better to do, try this one:

8: Choose a and b uniformly at random from the interval (0, 1). Find the probability that the integer closest to a/b is even and express the answer in the form $p + q\pi$ for rational p and q.