1)

When dealing with probability using a dice, let’s assume we have a two fair, 6-sided dice that are rolled together.

a) What is the probability of the sum of the numbers on the dices to be 8 or larger?

b) What is the probability of rolling a 12 on the dices?

c) If one dice is red, and the other is green, what is the probability that the number on the red dice is greater than or equal to the one on the green dice?

d) Now assuming we have one more blue dice, all of different color (i.e. red, green, blue).What is the probability the number on the red dice is ***greater than or equal to*** the green dice and the blue dice?

e) What is the probability of all three dices having the same number?

2)

1. Is 0!=1! a correct statement ? What is the answer for 0! ?

(b)Let us consider another example of sticks and stones. You now have 40 sets of sticks and stones. You want to take 20 sets with you while going for a small building project. In how many ways can you do it?

(c) Find the number of subsets of the set {1,2,3,4,5,6,7,8,9,10,11,12} having 5 elements.

(d)We have 50 points that are painted on a circle. How many cyclic quadrilaterals can be drawn by using these different points? (Hint: For any set of 4 points we get a cyclic quadrilateral.)

(e) There are 500 novels and 40 biographies. In how many ways can 4 novels and 2 biographies be arranged on a shelf?