

Stat322

Counting Examples

- (a) Ninety students of a class are split into 3 sections.
 - (a) If the section size is not fixed, how many different possibilities are there to form sections?

 - (b) If the sections are fixed to size 30, how many different possibilities are there?

- (b) A soccer team has 11 players. Before a game starts, the players come out of the team box one after the other. How many different orders are possible?

- (c) The coach has to decide on five players when the game comes to a penalty shoot-out. How many possibilities does he have?

- (d) The coach has to decide on five players when the game comes to a penalty shoot-out and give an order, in which they have to shoot. How many possibilities does he have?

- (e) Ten players form two basketball teams. How many possibilities for building different teams are there?

- (f) Some student club consists of 5 statisticians, 10 computer scientists and 15 mathematicians. For a committee six students are elected, two from each department. How many different possibilities for the committee members do exist?

- (g) Birthday problem: n people attend a party. We assume that every person has an equal probability of being born on any day during the year, independently of everybody else. What is the probability that at least two people have the same birthday? (no leap years for simplicity)

- (h) What is the probability that the sum of two dice is greater than 10?

- (i) A six sided die is rolled three times independently. What is more likely: a sum of 11 or a sum of 12?