

### Using Distributions

1. There are about 8 Colloquiums at IISER Mohali during each semester (which is 16 weeks long). What is the probability that there is a gap of at least two weeks when there is no colloquium?
2. In a class of 200 students, the average in an examination was 10.5 marks with a standard deviation of 3.1. Estimate the number of students with marks between 8 and 11. Estimate the highest and lowest marks.
3. On the average 2.5 students enter the mess every second during the lunch session. If you wait for 10 seconds, what is the probability that you will see exactly 20 students? at least 20 students? at most 20 students?
4. The average height of people in Punjab is 170 centimetres with a standard deviation of 5. Estimate the percentage of people who have a height above 183 centimetres? Estimate the percentage of people who have height between 160 and 180?
5. There are 71 faculty members in IISER Mohali. Estimate the probability that at least 5 of them have birthday on the same day? (Assume that there are exactly 365 birthdays possible.)
6. A certain sample of cells has 1 cell division every 10 minutes. A student needs to observe 5 cell divisions in order to get a complete picture of the process. What is the probability that the student will take at most one hour to complete the experiment?