1) Tasfia has a spinner whose shape is like a regular pentagon, with a toothpick pushed through its center. These pentagon consists of five triangles that are numbered from 1 to 5. The picture of this pentagon is give below. Each time, the spinner is spun until it lands on one of the five edges of the pentagon. The spinner is spun five times. Calculate the probability of getting at most two 5's. [6]
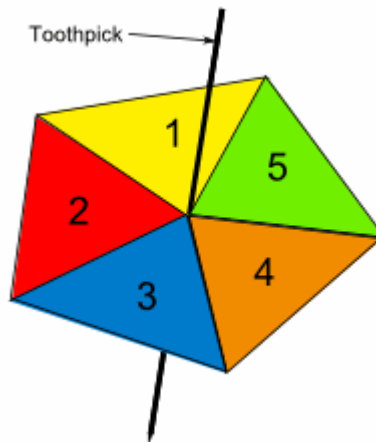
2) Suppose Solar power plants failures occur with an average of 5 failures every year, calculate the probability that there will be more than one failure during a particular week. [6]

3) In Bangladesh, the height of adult people is normally distributed with a mean of 185 cm & a variance of 2cm. Calculate the probability that a adult people height is greater than 184 cm. Draw a figure. [3+3]

4) A researcher wishes to test whether the mean weight of the adult men in Bangladesh is less than 70kg . To test this 5 people are selected & their weights are recorded:

      60kg   75kg   72kg   65kg   68kg

Test this at 5% level of significance. [6]

5) Blood samples of 5 people were sent to each of two laboratories (Lab 1 and Lab 2) for cholesterol determinations. The resulting data are summarized here:

Lab 1	Lab 2
276	318
270	287
265	285
300	262
280	296

The (population) mean cholesterol levels reported by Lab 1 is greater than the (population) mean cholesterol levels reported by Lab 2? Test this at 10% level of significance. [6]