R Day 5:

1. Five terminals on an on-line computer system are attached to a communication line to the central computer system. The probability that any terminal is ready to transmit is 0.95.
   Let X denote the number of ready terminals.
   a) Find the probability of getting exactly 3 ready terminals.
   b) Find all the probabilities.

2. It is known that 20% of integrated circuit chips on a production line are defective. To maintain and monitor the quality of the chips, a sample of twenty chips is selected at regular intervals for inspection.
   Let X denote the number of defectives found in the sample.
   Find the probability of different number of defective found in the sample?

3. It is known that 1% of bits transmitted through a digital transmission are received in error. One hundred bits are transmitted each day. Find the probability of different number of bits found in error each day.?

4. Plot all of the above problems in a single window for random variable and respective Probability distribution.

5. For Q.No. 1 Find $P(X \leq 3)$ and $P(X > 3)$. For Q. No. 2 Find $P(X \leq 4)$ and $P(X > 4)$. Find all the cumulative probabilities and round to 4 decimal places.

6. The probability that a patient recover from a rare blood disease is 0.4. If 15 people are known to have contracted this disease, what is the probability that (a) at least10 survive, (b) from 3 to 8 survive, and (c) exactly 5 survive?

7. Write your own function for Binomial Distribution and cumulative binomial distribution.