1. **Perform the following Experiment A**: Roll the die 5 times.
   (a) **Repeat Experiment A 10 times**
   (b) **Fill in the following Table**

Trial	Outcome of Roll 1	Outcome of Roll 2	Outcome of Roll 3	Outcome of Roll 4	Outcome of Roll 5	Sum of the Rolls
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

   (c) **Approach the board and draw the dot plot for Y = Sum of the Rolls**

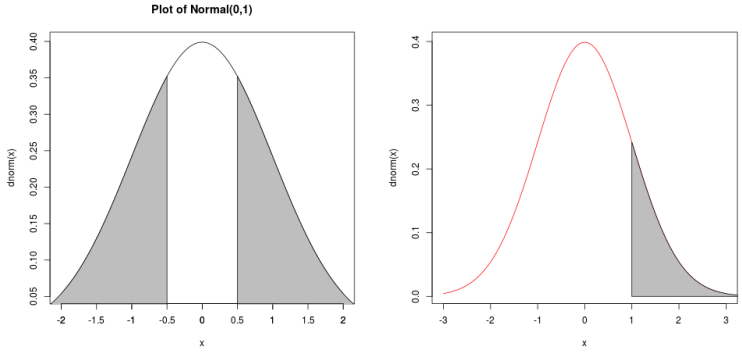
2. We toss a coin n times and note down the number of heads obtained. Suppose the Probability of getting a head in one toss is p, then find
   (a) $P(n, p, k) = P($ getting k heads in n tosses$)$.
   (b) Let $n = 8$, then for each $p = 0, 1/2, 1$ calculate numerical value of $P(n, p, k)$ for every $k = 0, 1, \cdots, 8$; construct relative frequency table; and plot the histogram.
   (c) Decide if any of them resemble the Normal Probability density curve $f : \mathbb{R} \to \mathbb{R}$ is given by

$$f(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}$$

3. The Normal Probability density function curve $f : \mathbb{R} \to \mathbb{R}$ is given by

$$f(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}$$

   (a) Find the area in the shaded region



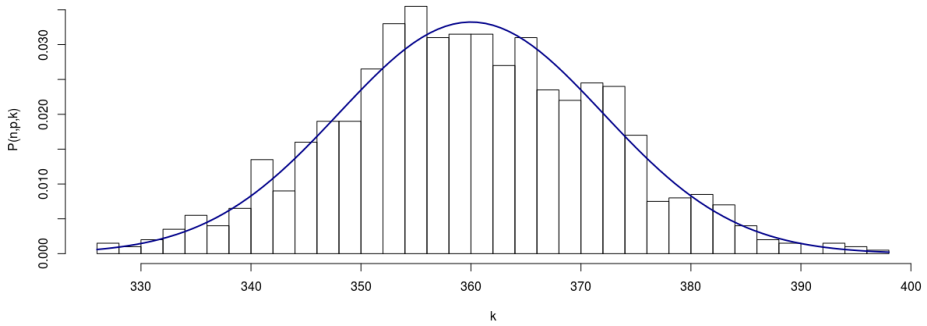
   (b) Find the area under the normal curve:
      (a) to the right of 1.25.
      (b) to the left of -0.40.
      (c) to the left of 0.80.
      (d) between -0.30 and 0.90.
      (e) outside -1.5 and 1.5.

   (c) Fill in the blanks:
      (a) The area between $\pm$ _____ under the normal curve equals 68%.
      (b) The area between $\pm$ _____ under the normal curve equals 75%.
      (c) The area between $\pm$ _____ under the normal curve equals 90%.
      (d) The area to the left of _____ under the normal curve equals 90%.

4. Suppose an airline checks in 600 pieces of luggage and the probability that a bag will arrive at its destination is 0.6. Find the probability that at least 330 bags arrive.

   (a) Can you provide an exact numerical value of the same ?

   (b) Following is the histogram of $P(n, p, k)$ for $n = 600$, and $p = 0.6$



   The curve drawn is the density of Normal $(360, 144)$. Using the normal probability table, can you approximate the probability in previous problem ?