**1. The time required for servicing transmissions is normally distributed with  = 45 minutes and  = 8 minutes. The service manager plans to have work begin on the transmission of a customer’s car 10 minutes after the car is dropped off and the customer is told that the car will be ready within 1 hour from drop-off. What is the probability that the service manager cannot meet his commitment?**

Ans- B. 0.2676

pnorm(50,45,8, lower.tail = FALSE)

[1] 0.2659855

**2.) The current age (in years) of 400 clerical employees at an insurance claims processing center is normally distributed with mean  = 38 and Standard deviation  =6. For each statement below, please specify True/False. If false, briefly explain why.**

**A. More employees at the processing center are older than 44 than between 38 and 44.**

Ans- (1-2/3)/2=1/6 employees are elder than 44 and there are (2/3)\*.5 employees are between 38 & 44, which are false.

B. A training program for employees under the age of 30 at the center would be expected to attract about 36 employees.

True.

**3.)** Both the distribution are different but the parameters are same.

**4. Let X ~ N(100, 202). Find two values, *a* and *b*, symmetric about the mean, such that the probability of the random variable taking a value between them is 0.99.**

Ans= D 48.5,151.5

a<-qnorm(.995,100,20)

b<-100-(a-100)