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Lab Assessment-4

Ques1: Suppose X is normal with mean 527 and standard deviation 105. Compute P(X >= 310)

Code:

```
> #Sahil Krishnat Mohite
> #21BCI0425
> #Ques1
> pnorm(310,527,105)
[1] 0.01938279
>
```

Ques2: Find P(80 pts < x < 95 pts.)

Code:

```
> #Sahil Krishnat Mohite
> #21BCI0425
> #Ques2
> pnorm(95,mean=100,sd=15) - pnorm(80,mean=100,sd=15)
[1] 0.2782301
>
```

Ques3: The weekly wages of 1000 workmen are normally distributed around a mean of Rs. 70 with S.D of Rs 5. Estimate the number of workers whose weekly wages will be

i) **Between Rs 69 and Rs 72**
ii) **Less than Rs 69**
iii) **More than 72**

Code:

```
> #Sahil Krishnat Mohite
> #21BCI0425
> #Ques3
> #(i)Between Rs 69 and Rs 72
> (pnorm(72, mean=70, sd=5)-pnorm(69, mean=70, sd=5))*1000
[1] 234.6815
> #The number of workers whose wages lies between Rs.69 and Rs.72 is 234
> #(ii) Less than Rs 69
> (pnorm(69, mean=70, sd=5))*1000
[1] 420.7403
> #The number of workers whose wages is less than Rs.69 is 421
> #(iii)More than Rs 72
> (1-pnorm(72, mean=70, sd=5))*1000
[1] 344.5783
> #The number of workers whose wages is more than Rs.72 is 345
>
```

Ques4: In a test on 2000 Electric Bulbs, it was found that the life of particular make, was normally distributed with an average life of 2040 hours and S.D of 60 hours. Estimate the number of bulbs likely to burn for

i) More than 2150 hours
ii) Less than 1950 hours
iii) More than 1920 hours but less than 2160 hours
iv) More than 2150 hours

Code:

```
> #Sahil Krishnat Mohite
> #21BCI0425
> #Ques4
> (1-pnorm(2150, mean=2040, sd=60))*2000
[1] 66.75302
> (pnorm(1950, mean=2040, sd=60))*2000
[1] 133.6144
> (pnorm(2160, mean=2040,sd=60)-pnorm(1920,mean=2040,sd=60))*2000
[1] 1908.999
> (1-pnorm(2150, mean=2040, sd=60))*2000
[1] 66.75302
>
```