

In [1]:

```
from scipy import stats
from scipy.stats import norm
```

Question 1

In [2]:

```
stats.norm.cdf(50,45,8) #when, x<=50
```

Out[2]:

0.7340144709512995

In [3]:

```
#when x>50
1- stats.norm.cdf(50,45,8)
```

Out[3]:

0.26598552904870054

Answer is 'B'

Question 2

Part (a)

In [10]:

```
#when probability of the employee with age less than or equal to 44, x<=44
100*(stats.norm.cdf(44,38,6)) #in percentage
```

Out[10]:

84.1344746068543

In [11]:

```
#when probability of the employee with age greater than 44, x>44
100*(1- stats.norm.cdf(44,38,6)) # in percentage
```

Out[11]:

15.865525393145708

In [12]:

```
#when probability of the employee with age less than or equal to 38,  $x \leq 38$   
100*(stats.norm.cdf(38,38,6)) # in percentage
```

Out[12]:

50.0

In [13]:

```
#when probability of the employee with greater than 38,  $x > 38$   
100*(1-stats.norm.cdf(38,38,6)) #in percentage
```

Out[13]:

50.0

In []:

```
#probability of age for the employees between 38 and 40,  $38 < x \leq 44$ .
```

In [14]:

```
100*(stats.norm.cdf(44,38,6)-(1-stats.norm.cdf(38,38,6))) #in percentage
```

Out[14]:

34.13447460685429

So, the statment "More employees at the process between 38 and 44" is TRUE.

In []:

Part (b)

In [18]:

```
#probability of employees less than age of 30,  $x \leq 30$   
stats.norm.cdf(30,38,6)
```

Out[18]:

0.09121121972586788

In [19]:

```
0.0912*400
```

Out[19]:

36.480000000000004

The number of employees with probability 0.0912 of them being under age of 30 = $0.0912 \times 400 = 36.48$ (or 36 employees)

Hence, the statment B is also TRUE.

In []:

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