

~~1st~~ 1st Step: write up Info.

500 wages  $\rightarrow$  Total Person

4%  $\rightarrow$  under 60

15%  $\rightarrow$  under 62.50

15%  $\rightarrow$  95 and more

5%  $\rightarrow$  100 and more

- median and quartiles were

82.25 , 72.75 , 90.50

- 4<sup>th</sup> and 6<sup>th</sup> Decile  $\leftarrow$

78.75      85.25

- Tell the Estimate graph

- Hint: Put the Information in the form of a Cumulative Frequency.

| Sol: | Percentile                 | Quartiles                     | Decile        |
|------|----------------------------|-------------------------------|---------------|
|      | $< 60 \rightarrow 4\%$     | $Q_1 = 72.75$                 | $D_4 = 78.75$ |
|      | $< 62.5 \rightarrow 15\%$  | $Q_2 = \text{Median} = 82.25$ | $D_6 = 85.25$ |
|      |                            | $Q_3 = 90.50$                 |               |
|      | $\geq 95 \rightarrow 15\%$ |                               |               |
|      | $\geq 100 \rightarrow 5\%$ |                               |               |

Note :

Values which are less than Given Value, we will add its Percentage in 0. The Sum will be  $y$ .  $P_y$  will be equal to Given Value

Note

Values which are more/over  
then the given value, we  
will subtract its percentage  
from the Maximum limit  
(100%), the result  
will be  $y$ .

Thus  $P_y = \text{given Value}$



① 4% → under 60

② 15% → under 62-50

③ 15% → 95 and more

④ 5% → 100 and more

As ① and ② are have value less so we will add the given Percentage in Lowest limit (0%).

$$① \quad 0 + 4\% = 4\%$$

$$P_4 = 60$$

$$② \quad 0 + 15\% = 15\%$$

$$P_{15} = 62.50$$

As ③ and ④ values are More so we will subtract from Maximum Limit (100%)

$$③ \quad 100 - 15 = 85\%$$

~~$$100 - 15 = 85\%$$~~

$$P_{85} = 95$$

$$④ \quad 100 - 5 = 95\%$$

$$P_{95} = 100$$

As we know

$$P_i = \frac{1}{100} \text{ of Total} = \text{Total Person} \times \frac{i}{100}$$

$$Q_i = \frac{25 \times i}{100} \text{ of Total} = \text{Total Person} \times \frac{25 \times i}{100}$$

$$O_i = \frac{10 \times i}{100} \text{ of Total} = \text{Total Person} \times \frac{10 \times i}{100}$$



$$Q_i = P(i \times 25)$$

$$D_i = P(i \times 10)$$



So we have

|                 |                        |                        |
|-----------------|------------------------|------------------------|
| $P_4 = 60$      | $D_4 = P_{40} = 78.75$ | $Q_1 = P_{25} = 72.75$ |
| $P_{15} = 62.5$ | $D_6 = P_{60} = 85.25$ | $Q_2 = P_{50} = 82.25$ |
| $P_{85} = 95$   |                        | $Q_3 = P_{75} = 90.5$  |
| $P_{95} = 100$  |                        |                        |

For our Exams write P in Sorted Form

$$P_4 = 60$$

$$P_{15} = 62.5$$

$$P_{25} = 72.75$$

$$P_{40} = 78.75$$

$$P_{50} = 82.25$$

$$P_{60} = 85.25$$

$$P_{75} = 90.5$$

$$P_{85} = 95$$

$$P_{95} = 100$$

$$P_{25} \Rightarrow C.F. = 125$$

$$P_{40} \Rightarrow C.F. = 200$$

$$P_{50} \Rightarrow C.F. = 250$$

$$P_{60} \Rightarrow C.F. = 300$$

$$P_{75} \Rightarrow C.F. = 375$$

$$P_{85} \Rightarrow C.F. = 425$$

$$P_{95} \Rightarrow C.F. = 475$$

we will use the formula

$$P_i \Rightarrow CF = \text{Total Person} \times \frac{i}{100} = 500 \times$$

$$P_4 \Rightarrow CF = 500 \times \frac{4}{100} = 20$$

$$P_{15} \Rightarrow CF = 500 \times \frac{15}{100} = 75$$

Now we have

C.F and Prices (x)

So we can easily write it in a Table Form

| Price (Rs)       | CF  |
|------------------|-----|
| 60               | 20  |
| 62.5             | 75  |
| <del>72.5</del>  | 125 |
| <del>78.75</del> | 200 |
| 82.85            | 250 |
| 85.25            | 300 |
| 90.5             | 375 |
| 95               | 425 |
| 100              | 475 |

$>, \geq, < =$  No Idea