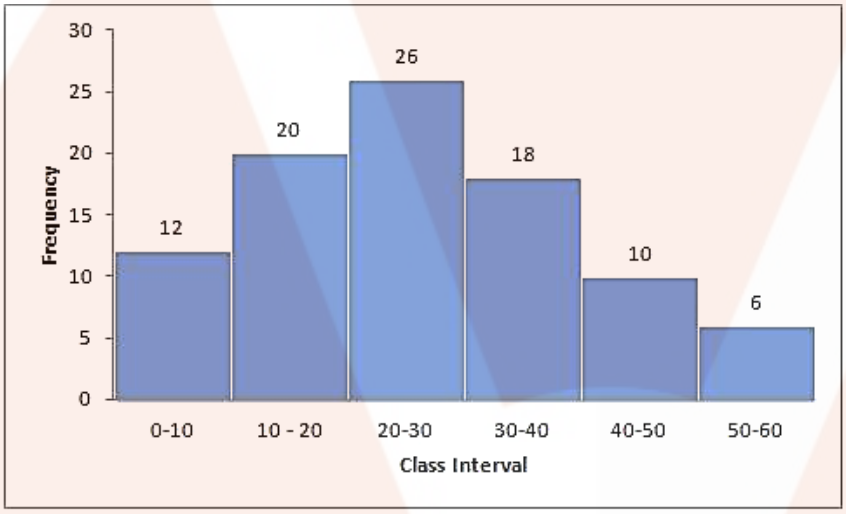
*Book Name: Selina Concise*

## Solution 1:

(i)

| Class Interval | Frequency |
|---|---|
| 0-10 | 12 |
| 10-20 | 20 |
| 20-30 | 26 |
| 30-40 | 18 |
| 40-50 | 10 |
| 50-60 | 06 |



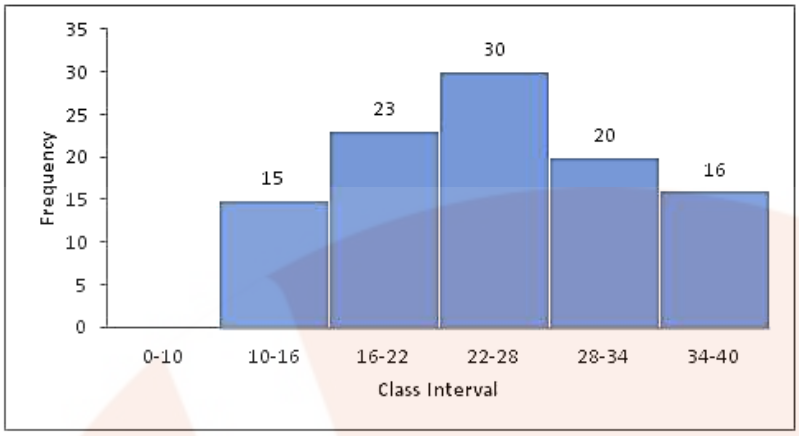

Steps of construction:

(a) Taking suitable scales, mark class intervals on x-axis and frequency on y-axis.

(b)Construct rectangles with class intervals as bases and corresponding frequencies as heights.

(ii)

| Class Interval | Frequency |
|---|---|
| 10-16 | 15 |
| 16-22 | 23 |
| 22-28 | 30 |
| 28-34 | 20 |
| 34-40 | 16 |



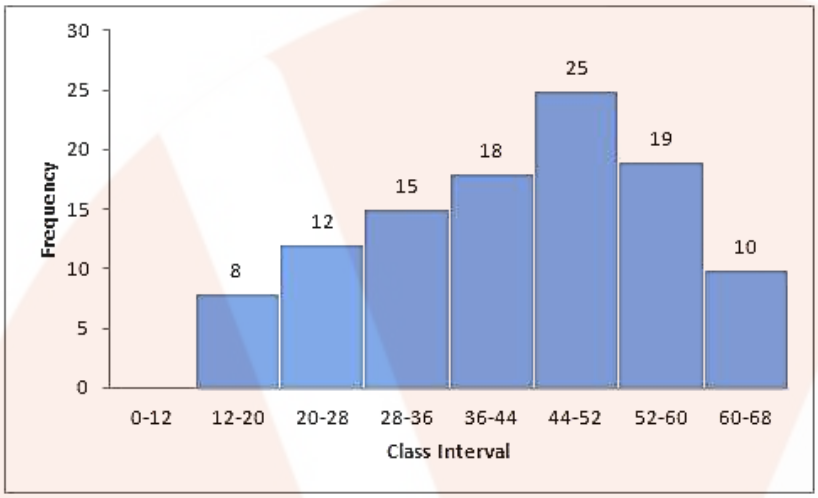

Steps of construction:
(a) Taking suitable scales, mark class intervals on x-axis and frequency on y-axis.
(b) Construct rectangles with class intervals as bases and corresponding frequencies as heights.
(iii)

| Class Interval (Inclusive form) | Class Interval (Exclusive Form) | Frequency |
|---|---|---|
| 30-39 | 29.5-39.5 | 24 |
| 40-49 | 39.5-49.5 | 16 |
| 50-59 | 49.5-59.5 | 09 |
| 60-69 | 59.5-69.5 | 15 |
| 70-79 | 69.5-79.5 | 20 |


Steps of construction:
(a) Convert the data into exclusive form.
(b) Taking suitable scales, mark class intervals on x-axis and frequency on y-axis.
(c) Construct rectangles with class intervals as bases and corresponding frequencies as heights.
(iv)

| Class Marks | Class Intervals | Frequency |
|---|---|---|
| 16 | 12-20 | 08 |
| 24 | 20-28 | 12 |

| | | |
|---|---|---|
| 32 | 28-36 | 15 |
| 40 | 36-44 | 18 |
| 48 | 44-52 | 25 |
| 56 | 52-60 | 19 |
| 64 | 60-68 | 10 |

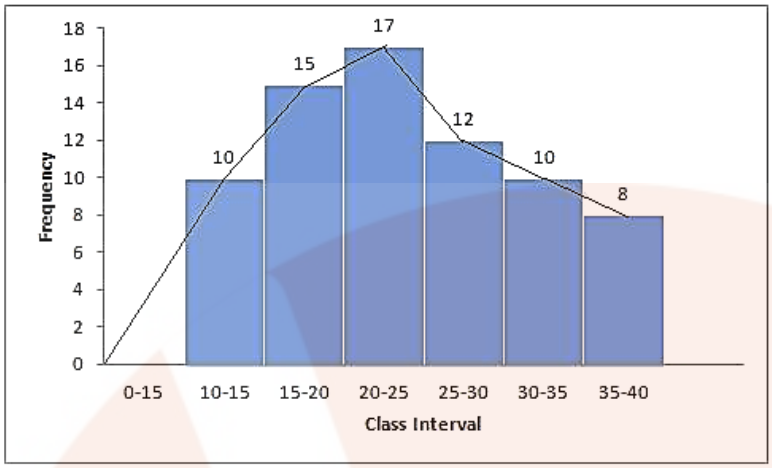



Steps of construction:
(a) Convert the class marks into class intervals.
(b) Taking suitable scales, mark class intervals on x-axis and frequency on y-axis.
(c) Construct rectangles with class intervals as bases and corresponding frequencies as heights.

## Solution 2:

(i)

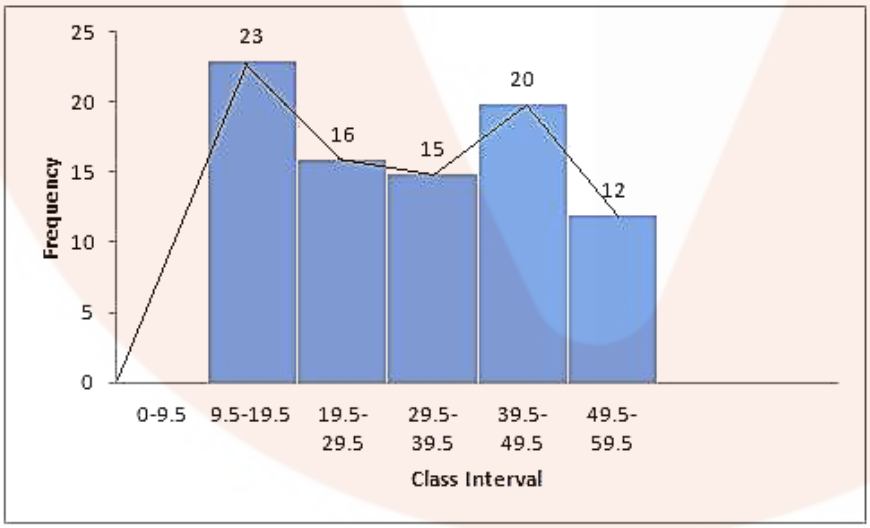
| Class Interval | Frequency |
|---|---|
| 10-15 | 10 |
| 15-20 | 15 |
| 20-25 | 17 |
| 25-30 | 12 |
| 30-35 | 10 |
| 35-40 | 08 |




**Steps of construction:**

(a) Taking suitable scales, mark class intervals on x-axis and frequency on y-axis.
(b) Construct rectangles with class intervals as bases and corresponding frequencies as heights.
(c) Join the mid-points of the rectangle to obtain the ogive.
(ii)

| Class Interval (Inclusive) | Class Interval (Exclusive) | Frequency | Cumulative Frequency |
|---|---|---|---|
| 10-19 | 9.5-19.5 | 23 | 23 |
| 20-29 | 19.5-29.5 | 16 | 39 |
| 30-39 | 29.5-39.5 | 15 | 54 |
| 40-49 | 39.5-49.5 | 20 | 74 |
| 50-59 | 49.5-59.5 | 12 | 86 |
| | | **Total** | **86** |



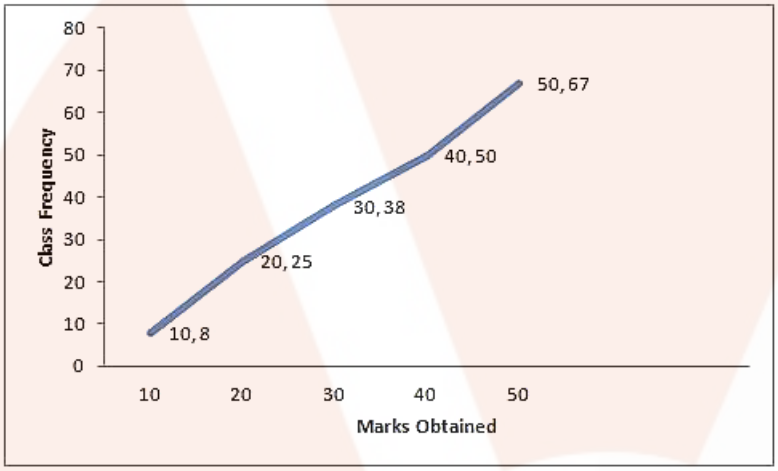

**Steps of construction:**

(a) Convert the data into exclusive form.
(b) Taking suitable scales, mark class intervals on x-axis and frequency on y-axis.
(c) Construct rectangles with class intervals as bases and corresponding frequencies as heights.
(d) Join the mid-points of the rectangle to obtain the ogive.

## Solution 3:

(i)

| Marks Obtained | No. of students (c.f.) |
|---|---|
| less than 10 | 8 |
| less than 20 | 25 |
| less than 30 | 38 |
| less than 40 | 50 |
| less than 50 | 67 |



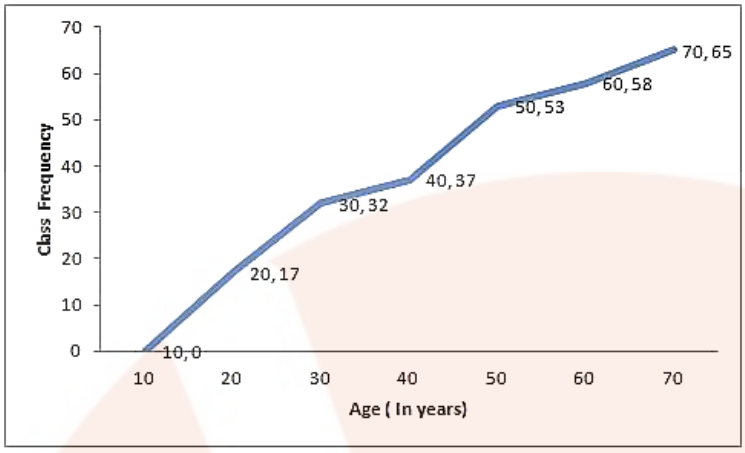

**Steps of construction:**

(a) Plot the points (10,8), (20, 25), (30, 38), (40, 50) and (50, 67) on the graph.

(b) Join them with free hand to obtain an ogive.

(ii)

| Age in years (less than) | Cumulative Frequency |
|---|---|
| 10 | 0 |
| 20 | 17 |
| 30 | 32 |
| 40 | 37 |
| 50 | 53 |
| 60 | 58 |
| 70 | 65 |

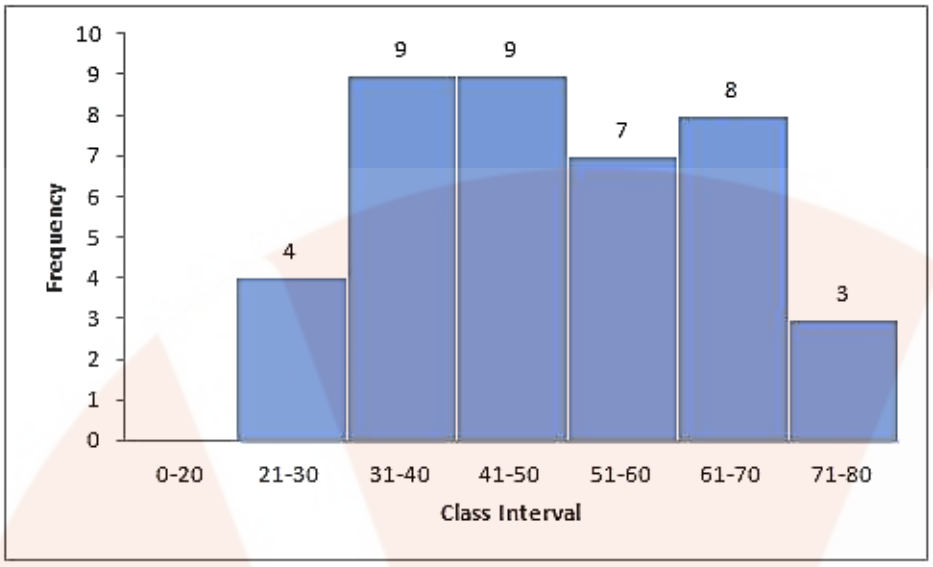



Steps Of construction:
(a) Plot the points (10, 0), (20, 17), (30, 32), (40, 37), (50, 53), (60, 58) and (70, 65) on the graph.
(b) Join them with free hand to obtain an ogive.

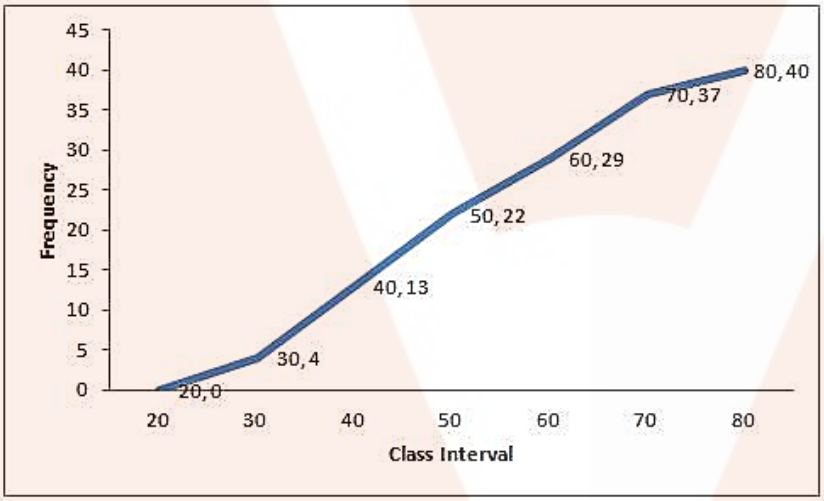
## Solution 4:

| Class Interval | Tally | Frequency | c.f. |
|---|---|---|---|
| 21-30 | 𝍸 | 4 | 4 |
| 31- 40 | 𝍸 𝍸 | 9 | 13 |
| 41 – 50 | 𝍸 𝍸 | 9 | 22 |
| 51 – 60 | 𝍸 𝍸 | 7 | 29 |
| 61 – 70 | 𝍸 𝍸 | 8 | 37 |
| 71 – 80 | 𝍸 | 3 | 40 |

(i)




(ii)




Plot the points (30,4), (40,13), (50,22), (60,29), (70,37) and (80,40) on the graph and join them with free hand to obtain an ogive.

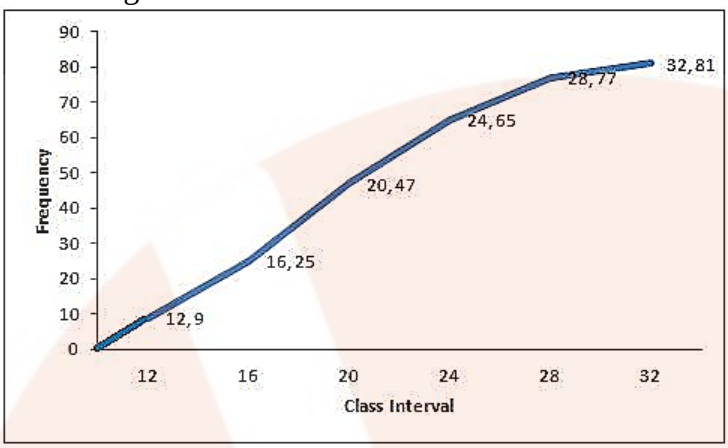
## Solution 5:

(a)

| Class Interval | Frequency | c.f. |
|---|---|---|
| 8-12 | 9 | 9 |
| 12-16 | 16 | 25 |
| 16-20 | 22 | 47 |
| 20-24 | 18 | 65 |
| 24-28 | 12 | 77 |

| | | |
|---|---|---|
| 28-32 | 4 | 81 |

(b) Now plot the points (12, 9), (16, 25), (20, 47), (24, 65), (28, 77), (32, 81) and join them to obtain an ogive.



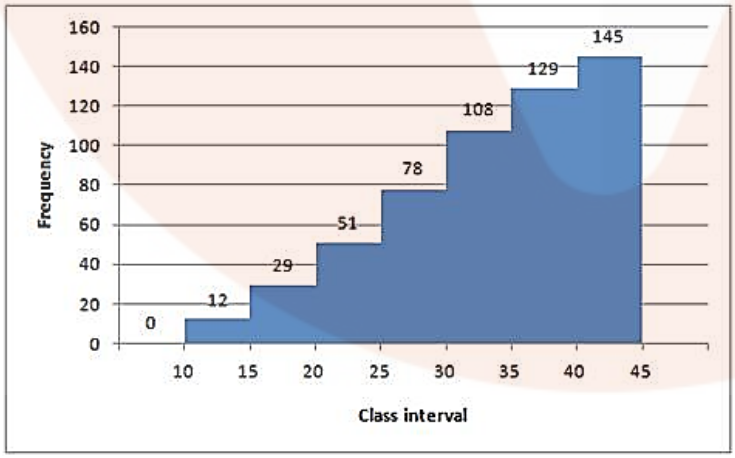

## Solution 6:

(a) Difference in consecutive class marks = 17.5 − 12.5 = 5

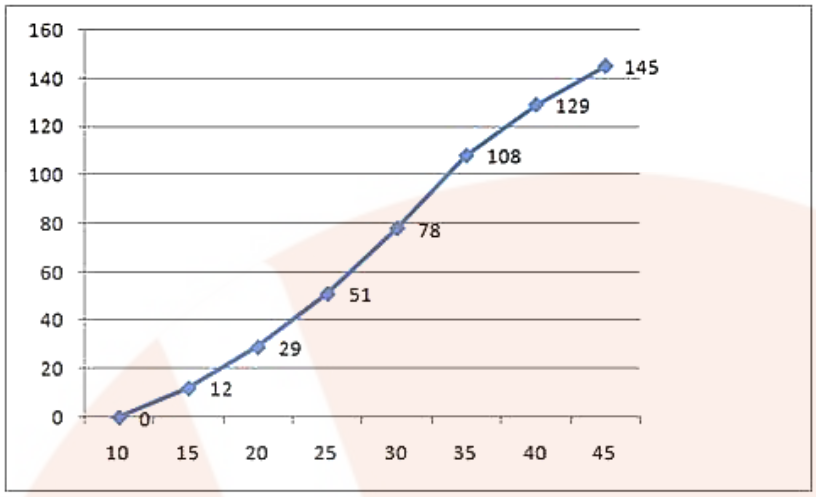
⇒ first class interval will be 10-15 and so on.

| Class Mark | Class Interval | Frequency | c.f. |
|---|---|---|---|
| 12.5 | 10-15 | 12 | 12 |
| 17.5 | 15-20 | 17 | 29 |
| 22.5 | 20-25 | 22 | 51 |
| 27.5 | 25-30 | 27 | 78 |
| 32.5 | 30-35 | 30 | 108 |
| 37.5 | 35-40 | 21 | 129 |
| 42.5 | 40-45 | 16 | 145 |

Total = 145




(b) Now plot the points (15,12), (20,29), (25,51), (30,78), (35,108), (40,129), (45,145) and join them to obtain an ogive.



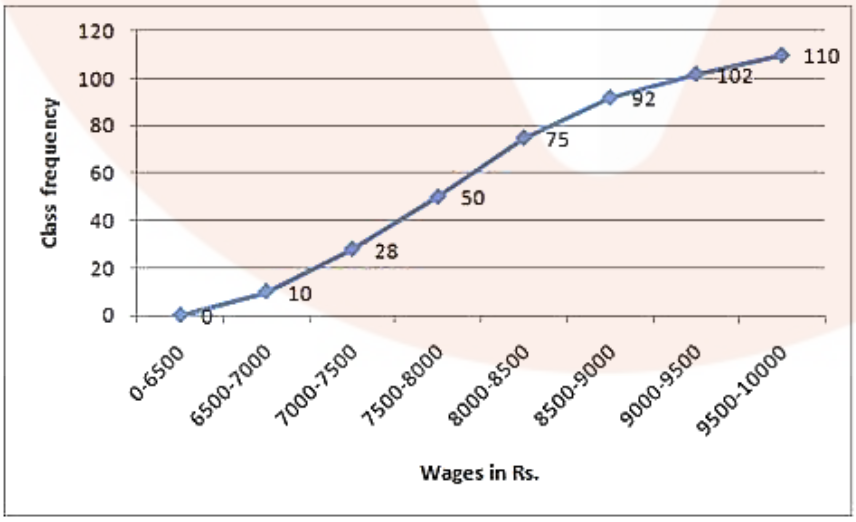

## Solution 7:

(i)

| Wages | No. of workers | c.f. |
|---|---|---|
| 6500-7000 | 10 | 10 |
| 7000-7500 | 18 | 28 |
| 7500-8000 | 22 | 50 |
| 8000-8500 | 25 | 75 |
| 8500-9000 | 17 | 92 |
| 9000-9500 | 10 | 102 |
| 9500-10000 | 8 | 110 |

Total = 110

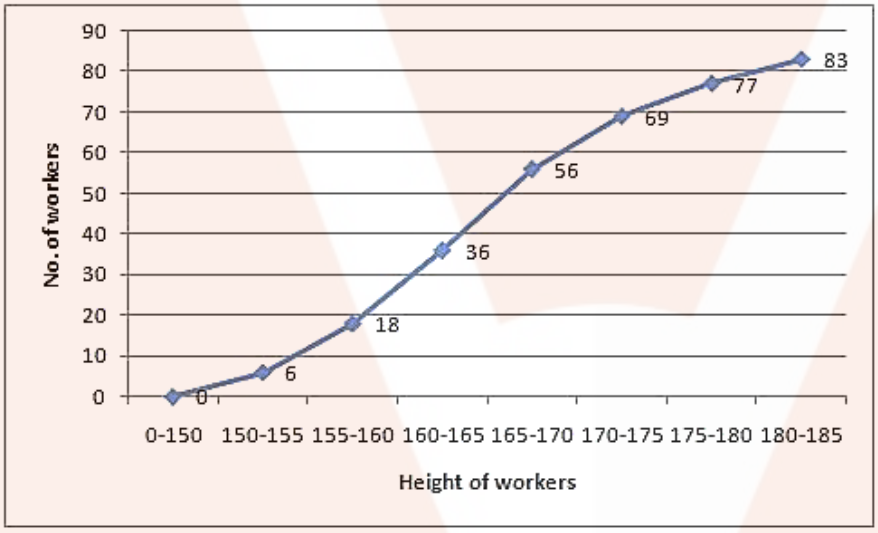
Now plot the points (7000,10), (7500,28), (8000,50), (8500,75), (9000,92), (9500,102) and (10000,110) and join them to obtain an ogive.



## Solution 8:

| Height (in cm) | No. of workers | c.f. |
|---|---|---|
| 150-155 | 6 | 6 |
| 155-160 | 12 | 18 |
| 160-165 | 18 | 36 |
| 165-170 | 20 | 56 |
| 170-175 | 13 | 69 |
| 175-180 | 8 | 77 |
| 180-185 | 6 | 83 |

We plot the points (155, 6), (160, 18), (165, 36), (170, 56), (175, 69), (180, 77) and (185, 83) on the graph and join them in free hand to obtain an ogive.




## Solution 9:

(i)

| Marks (less than) | Cumulative frequency | Frequency |
|---|---|---|
| 0-10 | 7 | 7 |
| 10-20 | 28 | 28-7=21 |
| 20-30 | 54 | 54-28=26 |
| 30-40 | 71 | 71-54=17 |
| 40-50 | 84 | 84-71=13 |
| 50-60 | 105 | 105-84=21 |
| 60-70 | 147 | 147-105=42 |
| 70-80 | 180 | 180-147=33 |

| | | |
|---|---|---|
| 80-90 | 196 | 196-180=16 |
| 90-100 | 200 | 200-196=4 |
| **Total** | | **200** |

(ii)

| **Marks (more than)** | **Cumulative frequency** | **Frequency** |
|---|---|---|
| 0-10 | 100 | 13 |
| 10-20 | 87 | 22 |
| 20-30 | 65 | 10 |
| 30-40 | 55 | 13 |
| 40-50 | 42 | 6 |
| 50-60 | 36 | 5 |
| 60-70 | 31 | 10 |
| 70-80 | 21 | 3 |
| 80-90 | 18 | 11 |
| 90-100 | 7 | 7 |
| **Total** | | **100** |