Example

1. Given below are the marks (out of 100) in mathematics obtained by 20 students of a calss in an annual examination.

23,75,56,42,70,84,92,51,40,63,87,58,35,80,14,63,49,72,66,61.

Arrange the above data in ascending order and find

(i) The lowest marks obtained.

(ii) The highest marks obtained.

(iii) The range of the given data.

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2. Given below are are the heights (in cm) of 11 boys of a class:

146, 143, 148, 132, 128, 139, 140, 152, 154, 142, 149.

the range of the given data is

A. 30

B. 26

C. 28

D. 20

Answer: B

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3. Suppose we make a survey of 20 families of a locality and find out the

number of children in each family. Let the observations be

2,2,3,1,1,2,3,2,2,1,2,2,3,1,2,1,1,3,2,2.

State the frequency of each observation.

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4. The marks obtained by 40 students of class VIII in an examination are given below: 16,17,18,3,7,23,18,13,10,21,7,1,13,21,13,15,19,24,16,3, 23,5,12,18,8,12,6,8,16,5,3,5,0,7,9,12,20,10,2,23 Divide the data into five groups, namely 0-5, 5-10, 10-15, 15-20 and 20-25 and prepare a grouped frequency table.

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5. The weights (in kg) of 35 persons are given below : 43, 51, 47, 62, 48, 40, 50, 62, 53, 56, 40, 48, 56, 53, 50, 42, 55, 52, 48, 46, 45, 54 . Prepare a frequency distribution table taking equal class size. One such class is 40 - 45 (where 45 is not included).

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6. The marks obtained by 60 students of a class in a methematics test are given

Marks	10–20	20–30	30–40	40 50	50 60	60 70
Number of students (Frequency)	7	11	9	13	16	4

Represent the above data by means of a histogram.

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7. The daily wages (in Rs) of 30 workes in a factory are:
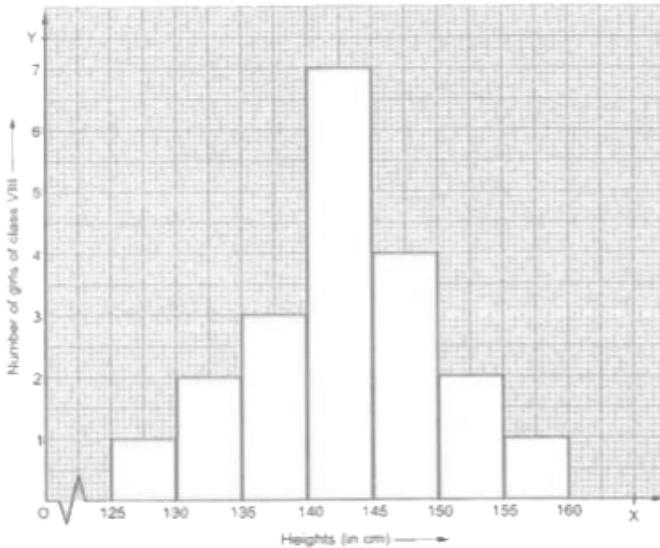
365, 335, 315, 339, 308, 355, 341, 367, 322, 335, 347, 305, 332, 379, 386, 306,

312, 335, 345, 368, 370, 384, 343, 333, 369, 357, 335, 346, 336, 388.

Using tally marks, make a freuency table with intervals as 300-310, 310-320. and so on. Draw a histogram for the frequency table so formed.

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8. Look at the histogram given below and answer the following questions.

(i) What information in being given by the histogram?

(ii) Which group contains maximum girls?

(iii) How many girls have a height of 140 cm and more?

(iv) If we divide the girls into the following three categories, how many

would there be in each?

150 cm and more - Group A

140 cm to less than 150 cm - Group B

Less than 140 cm-Group C

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1. The number of members in 20 families are given below:

4,6,5,5,4,6,3,3,5,5,3,5,4,4,6,7,3,5,5,7.

Prepare a frequency distribution of the data.

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2. A dice was thrown 30 times and the following outcomes were noted:

2,1,2,4,6,,1,2,3,6,5,4,4,3,1,1,3,1,1,5,6,6,2,2,3,4,2,5,5,6,4.

prepare a frequency table.

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3. Following data gives the number of children in 40 families:

1,2,6,5,1,5,1,3,2,6,2,3,4,2,0,0,4,4,3,2 2,0,0,1,2,2,4,3,2,1,0,5,1,2,4,3,4,1,6,2 Represent it in the form of a frequency distribution.

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1. The marks obtained by 40 students of a class in an examination are given below,

8,47,22,31,17,13,38,26,3,34,29,11,22,7,15,24,38,31,21,35,42,24,45,23,21,27,29,49,25,48,2

Prepare a frequency distribution table with equal class intervals starting from 0-10 (where 10 is not included).

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2. The electricity bills (in rupees) of 25 houses of a certain locality for a month are given below:

324, 700, 617, 400, 356, 365, 435, 506, 548, 738, 780, 378, 570, 685, 312, 630, 584, 674, 754, 776, 596, 747, 565, 763, 472.

Arrange the above data in increasing order and form a frequency table using equal class intervals, starting from 300-400, where 400 is not included.

3. The weekly wages (in rupees) of 28 workers of a factory are given below,

668, 610, 642, 658, 668, 620, 719, 720, 700, 690, 710, 642, 672, 654, 692, 706,

718, 702, 704, 678, 615, 640, 680, 716, 705, 615, 636, 656.

Construct in frequency table with equal class intervals, taking the first of

the class intervals as 610-630, where 630 is not included.

4. The weekly pocket expenses (in rupees) of 30 students of a class are

given below:

62, 80, 110, 75, 84, 73, 60, 62, 100, 87, 78, 94, 117, 86, 65, 68, 90, 80, 118, 72, 95,

72, 103, 96, 64, 94, 87, 85, 105, 115

Construct a frequency table with class intervals 60-70 (where 70 is not

included), 70-80, 80-90. etc.

5. The daily earnings (in rupees) of 24 stores in a market was recorded as under:

715, 650, 685, 550, 574, 530, 610, 525, 742, 680, 736, 524, 500, 585, 723, 545, 532, 560,, 580, 545, 625, 630, 645, 700.

Prepare a frequency table taking equal class sizes. one such class is 500-550, where 550 is not included.

6. The heights (in cm) of 22 students were recorded as under:

125, 132, 138, 144, 142, 136, 134, 125, 135, 130, 126, 132, 135, 142, 143, 128, 126, 136, 135, 130, 130, 133.

Prepare a frequency distribution table, taking equal class intervals and starting from 125-130, where 130 is not included.

Exercise 21 C

1. The top speeds of 30 different land animals have been organised into a frequency table given below:

Maximum speed (in km/h)	10–20	20–30	30–40	40–50	50–60	60–70
Number of animals	3	5	10	8	0	2

Draw a histogram for the given data.

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2. The ages (in years) of 360 patients treated in a hospital on a particular day are given below:

Age (in years)	10–20	20–30	30–40	40–50	50–60	60–70
Number of patients	90	40	60	20	120	30

Draw a histogram for the given data.

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3. Draw a histogram for the frequency distribution of the following data:

Class interval	8–13	13–18	18–23	23–28	28–33	33–38	38–43
Frequency	320	780	160	540	260	100	80

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4. Draw a histogram for the frequency distribution of the following data:

Class interval	20–25	25–30	30–35	35–40	40–45	45–50
Frequency	30	24	52	28	46	10

5. Draw a histogram for the following data:

Class interval	600–640	640–680	680–720	720–760	760–800	800–840
Frequency	18	45	153	288	171	63

6. The following table shows the number of illitrate persons in the age group (10-58 Years) in a town. Represents the given data by means of a histogram.

Age group (in years)	10–18	18–26	26–34	34–42	42–50	50–58
Number of illiterate persons	175	325	100	150	250	525

7. The marks obtained (out of 20) by 30 students ofa class in a test are given below:

7,10,8,16,13,14,15,11,18,11,15,10,7,14,20,19,15,16,14,20,10,11,14,17,13,12,15,14,16,17.Prepare a frequency distribution table for the above data using class intervals of equal width in which one class interval is 3 - 8 (excluding 8 and including 4).From the freequency distribution table so obtained draw a histogram

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8. The weights (in kg) of 30 students of a class are
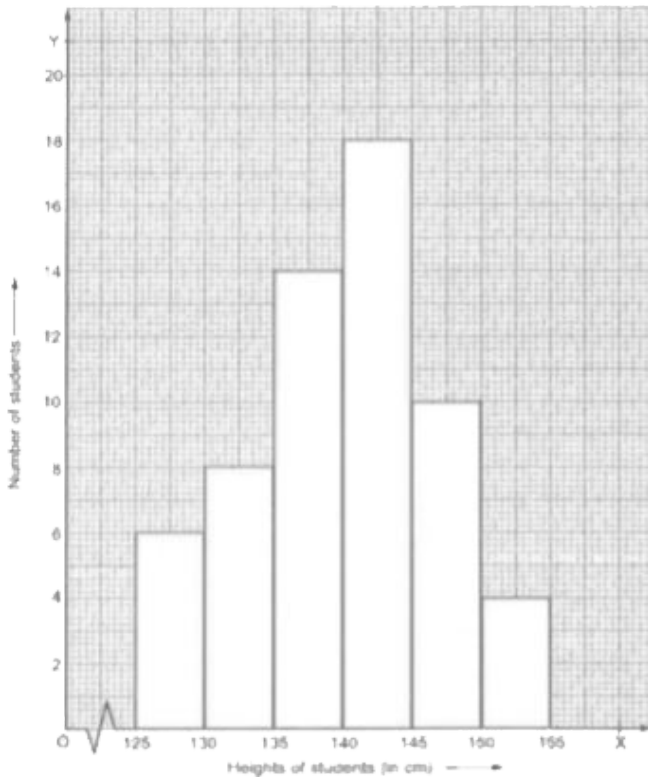
39,43,32,37,29,26,31,45,

46,31,37,38,30,39,36,41,35,34,41,46,39,38,36,38,40,42,33,43,44,33.

Prepare a frequency distribution table using one class interval as 30-35 in which 30 is included and 35 excluded. using the above data, draw a histogram.

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9. Look at the histogram given below and answer the questions that follow:

Which class interval has the least number of students ?

A. $150 - 155$

B. $125 - 130$

C. $135 - 140$
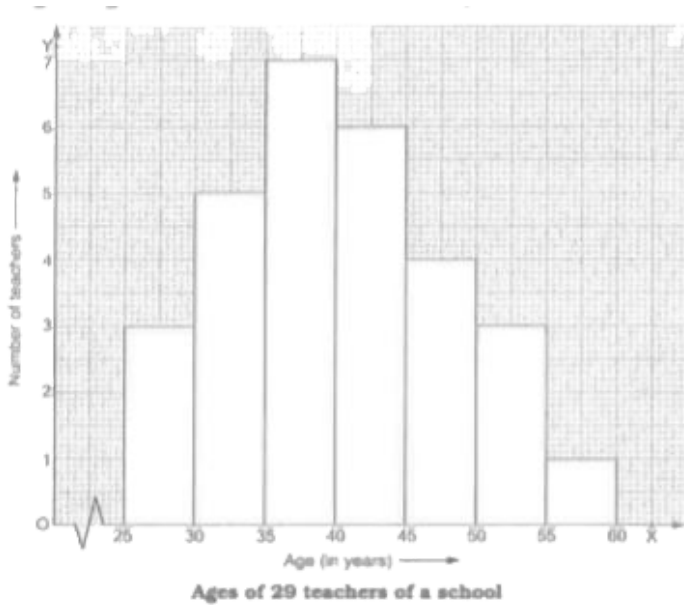
D. none of these

Answer: A

10. Look at the histogram given below answer the question that follow:

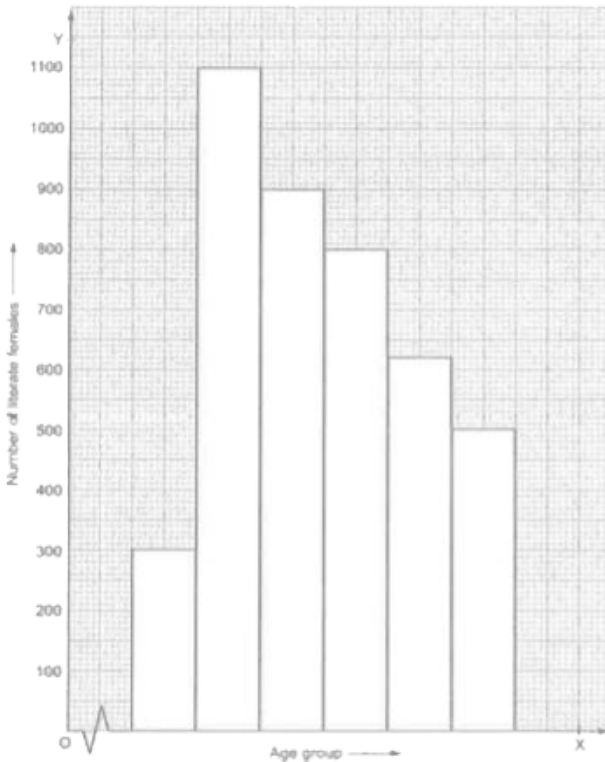Ages of 29 teachers of a school

(i) What information in being given by the histogram?

(ii) How many teachers are of age less than 45 years?

(iii) How many teachers are of age 40 years or more but less than 55 years?

11. The histogram given below shows the number of literate females iin the age group of 10 to 40 years. Study the histogram carefully and answer the questions that follow.

(i) Write the classes, assuming that all the classes are of equal width.

(ii) What is the class width?

(iii) In which age group are the literate females the least?

(iv) In which age group is the number of literate females the highest?

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