

NOTES

CLASS 7

MATHS

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Study Material

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DATA HANDLING

2. I. Important Concepts / Results

3. In our day to day life, we come across many statements that involve the term “Average”. Average is a number indicating the representative of central value of a group of observations or data. This representative value or central value is known as Measure of Central Tendency.
4. a) Range = Maximum value of given data - Minimum value of given data
5. a) Arithmetic Mean or Average or Mean = Sum of all observations / Total number of observations
6. b) Mode : The mode of a set observations is the observation that occurs most often
7. c) Median : The middle most observation of the data arranged in ascending or descending order
8. d) Graphical representation of data : Bar graph and double bar graph

Examples

i) MCQ

1) The Marks of 11 students of a class are as given below : 78, 11, 99, 63, 94, 6, 78, 36, 30, 55, 22 is

- a) 90 b) 91 c) 92 d) 93

Ans :- d) 93

2) The median of the data 20, 30, 40, 10, 15, 25, 35 is

- a) 20 b) 25 c) 30 d) 40

Ans: - b) 25

3) The mode of the data 13, 16, 12, 14, 19, 12, 14, 13, 14 is

- a) 12 b) 13 c) 14 d) 16

Ans: - c) 14

4) The mean of first five natural number is

- a) 4 b) 3 c) 0 d) 2

Ans: - b) 3

ii) Case Study Based Questions:-

Mode of Transport

A survey was conducted for the students studying in class VII of Zedland New school for the different modes of transport available for them to travel. Sanju and Manju started from their house to go to school .They had four different options of Mode of transport available for them to travel

Mode of Transport	Distance Covered (in Km)	Time Taken (in hours)
Walking	40	10
Cycle	100	20



Car	600	10
Bus	500	25

Read the table and answer the questions:

a) Find the Speed of the bus in Km/h is

Ans: Speed of the bus is Distance / Time = $500 / 25 = 20$ km/hr

b) What is the ratio of speed of the car and the cycle?

Ans: Speed of the car is $600 / 10 = 60$ km/hr

Speed of the cycle is $100 / 20 = 5$ km /hr

Required Ratio is $60 / 5 = 12:1$

c) In the above given information, which mode of the transport has the fastest speed?

Ans: - Car

Short Answer type Questions:-

1) A cricketer scores the following runs in eight innings : 58, 76, 40, 35, 46, 45, 0, 100.

Find the mean score.

Solution: Mean Score = $\frac{\text{Sum of all observations}}{\text{Total number of observations}} = \frac{58+76+40+35+46+45+0+100}{8} = \frac{400}{8} =$

50.

2) Find the mode of 7, 6, 5, 3, 0, 3, 4, 8, 2, 4, 5, 2, 4

Solution :Arranging the same numbers together, we get 0, 2,2, 3, 3, 4, 4, 4, 5, 5, 6, 7, 8

Mode is 4 because it occurs most frequently than other observations.

3) Find the median of the data: 24, 36, 46, 17, 18, 25, 35

Solution: We arrange the data in ascending order, we get 17, 18, 24, 25, 35, 36, 46

Median is the middle observation. Therefore 25 is the median.

Long Answer type Questions

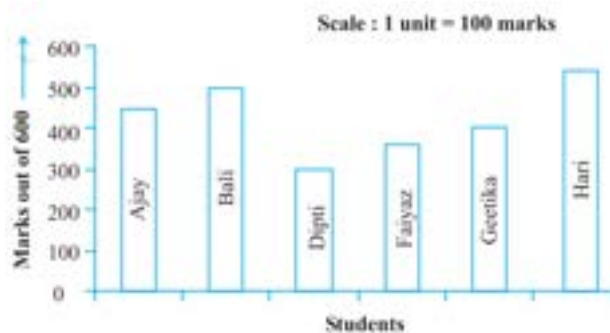
1) Following data gives total marks (out of 600) obtained by six children of a particular class.

Students	Ajay	Bali	Dipti	Faiyaz	Geetika	Hari
Marks	450	500	300	360	40	540

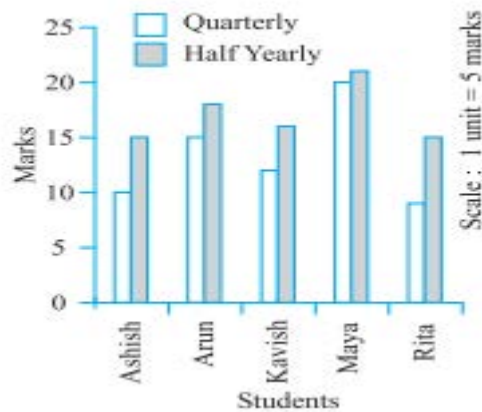
Represent the data on a bar graph.

Solution:

2) A mathematics teacher wants to see, whether the new technique of teaching she applied after quarterly test was effective or not. She takes the scores of the 5 weakest children in the quarterly test (out of 25) and



in the half yearly test (out of 25): Draw double bar for the following data
Solution--



III. Questions for Practice

i) MCQ

1. A batsman scored the following number of runs in six innings: 35, 30, 45, 65, 39 and 20 .The mean runs scored by him in an inning is

- a) 39 b) 38 c) 37 d) 40

2. The marks of 11 students of a class are as given below:

78,11,99,63,94, 6, 78, 36, 30, 55, 22

3. The range of marks is

4. a) 90 b) 91 c) 92 d) 93

5. 3. The mode of the distribution 3, 5, 7, 4, 2, 1, 4, 3, 4 is

6. a) 7 b) 4 c)3 d) 1

7.

8. 4. The median of the distribution 2, 3, 4, 7, 5, 1, 6 is

9. a) 1 b) 2 c) 3 d) 4

10. Number of children in six different classes are given below

Class	Number of children
6	400
7	350
8	320
9	280
10	225
11	200



11. Answer the following related questions (5 to 11)
12. 5. In which class is the number of Children maximum?
13. a) 6 b) 7 c) 8 d) 9
14. 6. In which class is the number of children minimum?
15. a) 8 b) 9 c) 10 d) 11
16. 7. The difference between the maximum and minimum number of children is
17. a) 100 b) 200 c) 300 d) 400
18. 8. In how many classes is the number of children less than 500?
19. a) 2 b) 4 c) 5 d) 6
20. 9. In how many classes is the number of children more than 100?
21. a) 6 b) 4 c) 3 d) 1
22. 10. The ratio of the number of children of class 6 and 11 is
23. a) 3:1 b) 2:1 c) 2:3 d) 1:4
24. 11. The total number of children is
25. a) 1775 b) 1675 c) 1575 d) 1785

26. ii) Short Answer Type Questions:-

27. 1. The scores in mathematics test (out of 25) of 15 students is as follows:
28. 19, 25, 23, 20, 9, 20, 15, 10, 5, 16, 25, 20, 24, 12, 20
29. Find the mode and median of this data. Are they same?
30. 2. The weights (in kg.) of 15 students of a class are:
31. 38, 42, 35, 37, 45, 50, 32, 43, 43, 40, 36, 38, 43, 38, 47
32. (i) Find the mode and median of this data. (ii) Is there more than one mode?
33. 3. Find the mode and median of the data: 13, 16, 12, 14, 19, 12, 14, 13, 14
34. 4. Organise the following marks in a class assessment, in a tabular form.
35. 4, 6, 7, 5, 3, 5, 4, 5, 2, 6, 2, 5, 1, 9, 6, 5, 8, 4, 6, 7
36. (i) Which number is the highest? (ii) Which number is the lowest?
37. (iii) What is the range of the data? (iv) Find the arithmetic mean.
38. 5. Find the mean of the first five whole numbers.
39. 6. A cricketer scores the following runs in eight innings:
40. 58, 76, 40, 35, 46, 45, 0, 100.
41. Find the mean score.
42. 7. The enrolment in a school during six consecutive years was as follows:
43. 1555, 1670, 1750, 2013, 2540, 2820
44. Find the mean enrolment of the school for this period.
45. 8. The heights of 10 boys were measured in cm and the results are as follows:
46. 142, 158, 135, 140, 154, 142, 147, 149, 142, 140.
47. Find the median and mode of the above data
48. 9. A cricketer scores the following runs in eight innings: 85, 67, 40, 53, 64, 45, 0, 100.
- Find the median score.
49. 10. Heights (in cm) of 25 children are given below:
50. 168, 165, 163, 160, 163, 161, 162, 164, 163, 162, 164, 163, 160, 163, 160, 165, 163, 162, 163, 164, 163, 160, 165, 163, 162



51. What is the mode of their heights? What do we understand by mode here?

52. Long Answer type Questions:-

53. 1. The rainfall (in mm) in a city on 7 days of a certain week was recorded as follows:

Day	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Rain fall (in mm)	0.0	12.2	2.1	0.0	20.5	5.5	1.0

54. (i) Find the range of the rainfall in the above data. (ii) Find the mean rainfall for the week.

55. (iii) On how many days was the rainfall less than the mean rainfall.

56. 2. Consider this data collected from a survey of a colony.

Favourite Sport	Cricket	Basket Ball	Swimming	Hockey	Athletics
Watching	1240	470	510	430	250
Participating	620	320	320	250	105

57. (i) Draw a double bar graph choosing an appropriate scale. What do you infer from the bar graph?

58. (ii) Which sport is most popular?

59. (iii) Which is more preferred, watching or participating in sports?

60. 3. The performance of a student in 1st Term and 2nd Term is given. Draw a double bar graph choosing appropriate scale and answer the following:

61. (i) In which subject, has the child improved his performance the most?

62. (ii) In which subject is the improvement the least?

63. (iii) Has the performance gone down in any subject?

Subject	English	Hindi	Maths	Science	S. Science
1 st Term (M.M. 100)	67	72	88	81	73
2 nd Term (M.M. 100)	70	65	95	85	75

64. 4. Number of children in six different classes are given below. Represent the data on a bar graph.

Class	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth
Number of Children	135	120	95	100	90	80

65. (a) How would you choose a scale?

66. (b) Answer the following questions:

67. (i) Which class has the maximum number of children? And the minimum?

68. (ii) Find the ratio of students of class sixth to the students of class eight.

69. 5. The heights of 10 girls were measured in cm and the results are as follows

70. 135, 150, 139, 128, 151, 132, 146, 149, 143, 141

71. i) What is the height of the tallest girl?

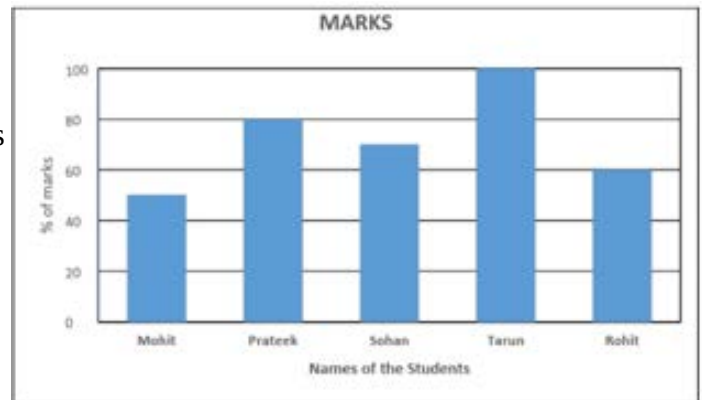
72. ii) What is the height of the shortest girl?



73. iii) What is the Range of the data?
 74. iv) Find the mean of the data?
 75. 6. Find the mean, median and mode of the following data :
 76. 85, 76, 90, 85, 39, 48, 56, 95, 81, 75
 77. **Case Study Based Questions:-**

78. 1. HIGH SCHOOL

79. Given below is a bar graph representing the
 80. percentage of marks obtained by five students
 81. in a test studying in high school.



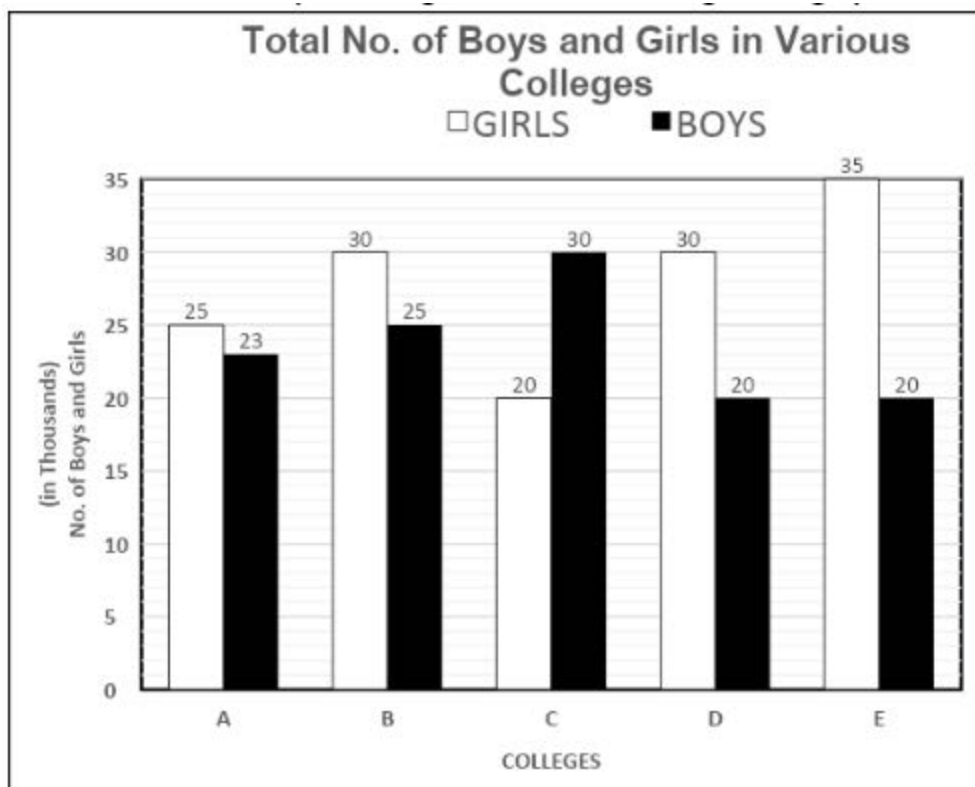
Answer the following questions based on the graph.

- a) What is the average percentage of marks obtained by the 5 pupils in the test?
 b) Name the pupil whose marks are $\frac{3}{4}$ of Prateek's Marks?
 c) Who got minimum marks?
 d) What is the Range of Marks of 5 students?

2. GENDER DISTRIBUTION

Study the given graph showing the gender distribution in a few colleges in Zedland .Answer the questions given below according to the graph :





- a) The total number of girls in colleges D and E together are approximately what percent of the total number of girls in colleges A, B and C together?
- b) What is the respective ratio of the number of boys in college D to the number of boys in college B?
- c) What is the ratio of total number of boys in all the colleges to that of total number of girls?
- d) Among the college which college has the best gender equality?

Answers for Questions for Practice

MCQ

1	a	6	d	11	a
2	d	7	b		
3	b	8	d		
4	d	9	a		
5	a	10	b		

Short Answers

1	Mode = median = 20, yes they are same
2	Median = 40 kg, Mode = 38 kg and 43 kg Yes, there are 2 modes (more than one mode)
3	Median = 14 and Mode = 14

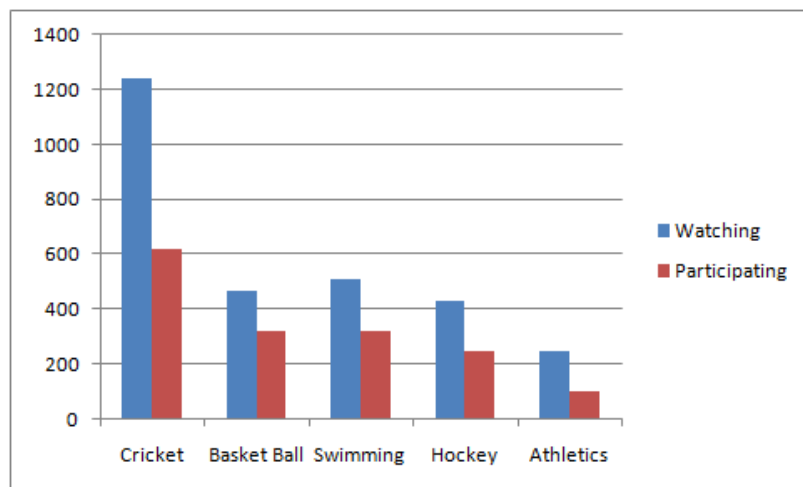


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6	50																		
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8	Median = Mode = 142																		
9	58.5																		
10	14																		

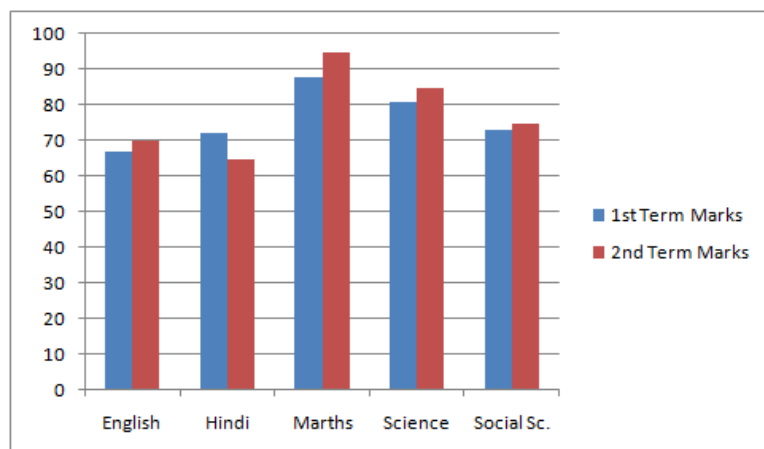
Long Answers

1. i) 20.5 m ii) 5.9 m iii) 5 days (Mon, Wed, Thu, Sat and Sun)

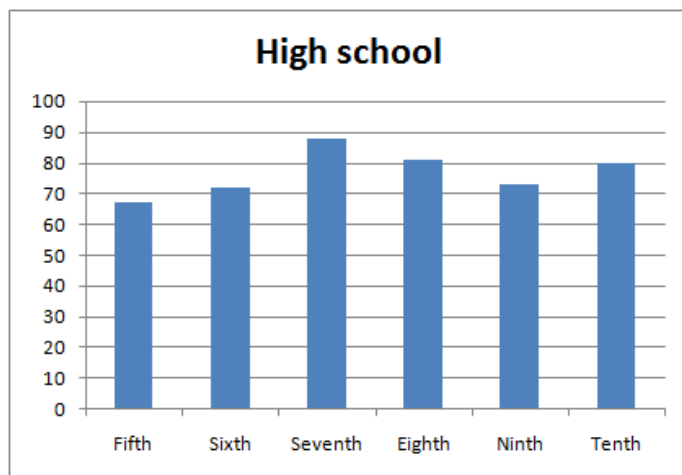
2.



3.



4.



5.i) 151cm ii)128cm, iii) 23cm iv) 141.4 cm v) 5 (143, 146, 149, 150, 151)

6. mean = 73, Median = 78.5 and Mode = 85

Case Study Based Questions

- 1) a) 72 b) Rohit c) Mohit d) 50
 2) a) 87% b) 4:5 c) 59: 70 d) A

Chapter Test

Class 7

Marks : 20

I Choose the correct answer:-

2 x 1 =2 marks

1. A batsman scored the following number of runs in six innings: 35, 30, 45, 65, 39 and 20 . The mean runs scored by him in an inning is
 a) 39 b) 38 c) 37 d) 40
2. The median of the distribution 2, 3, 4, 7, 5, 1, 6 is
 a) 1 b) 2 c) 3 d) 4

II. Answer the following :

3 X 2 = 6 Marks

3. The heights of 10 boys were measured in cm and the results are as follows: 142, 158, 135, 140, 154, 142, 147, 149, 142, 140.

Find the median and mode of the above data

4. Find the mean of the first five whole numbers.

5. A cricketer scores the following runs in eight innings:

58, 76, 40, 35, 46, 45, 0, 100. Find the mean score.

III. Answer the following:-

3 x 4 = 12 Marks

6. The performance of a student in 1st Term and 2nd Term is given. Draw a double bar graph choosing appropriate scale and answer the following:

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(i) In which subject, has the child improved his performance the most?

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(i) Which class has the maximum number of children? And the minimum?

(ii) Find the ratio of students of class sixth to the students of class eight.

8. The heights of 10 girls were measured in cm and the results are as follows

135, 150, 139, 128, 151, 132, 146, 149, 143, 141

i) What is the height of the tallest girl?

ii) What is the height of the shortest girl?

iii) What is the Range of the data?

iv) Find the mean of the data?

Chapter Test Data Handling

Marks : 30

I Choose the correct answer:-

4 x 1 = 4 marks

1) The Marks of 11 students of a class are as given below : 78, 11, 99, 63, 94, 6, 78, 36, 30, 55, 22 is

a) 90 b) 91 c) 92 d) 93

2) The median of the data 20, 30, 40, 10, 15, 25, 35 is

a) 20 b) 25 c) 30 d) 40

3) The mode of the data 13, 16, 12, 14, 19, 12, 14, 13, 14 is

a) 12 b) 13 c) 14 d) 16

4) The mean of first five natural number is

a) 4 b) 3 c) 0 d) 2

II. Answer the following :

3 × 2 = 6 Marks

5. Find the mean of first five prime numbers,

6. Find the mode of 7, 6, 5, 3, 0, 3, 4, 8, 2, 4, 5, 2, 4

7. Find the median of the data: 24, 36, 46, 17, 18, 25, 35

III. Answer the following:-3 × 4 = 12Marks

8. The rainfall (in mm) in a city on 7 days of a certain week was recorded as follows:

Day	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
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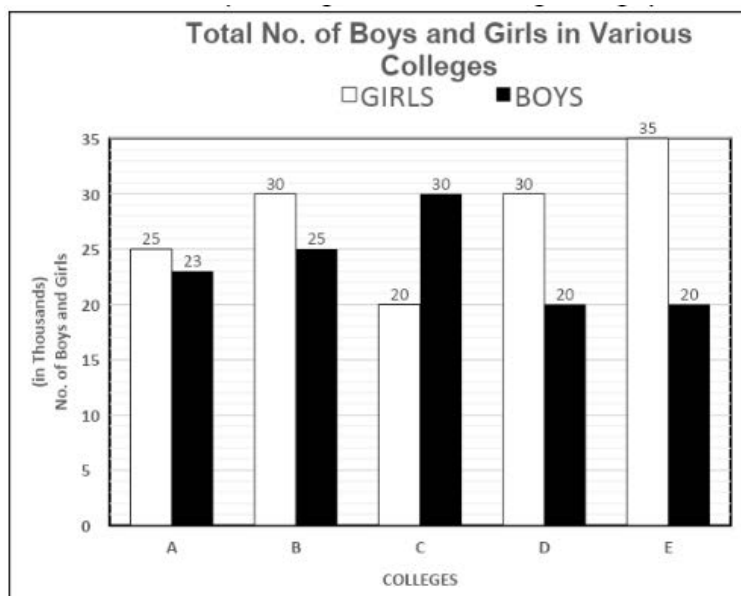
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Case Study Based Questions :- $2 \times 4 = 8$ marks

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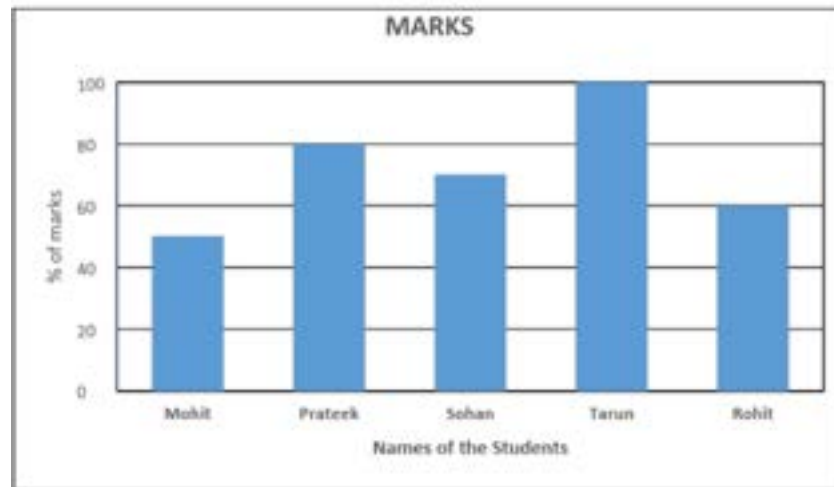


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- c) What is the ratio of total number of boys in all the colleges to that of total number of girls?
- d) Among the college which college has the best gender equality?

12. HIGH SCHOOL

Given below is a bar graph representing the percentage of marks obtained by five students in a test studying in high school.

Scale : 1 unit = 10% of marks



Answer the following questions based on the graph.

- a) What is the average percentage of marks obtained by the 5 pupils in the test?
- b) Name the pupil whose marks are $\frac{3}{4}$ of Prateek's Marks?
- c) Who got minimum marks?
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