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## MATHS

## BOOKS - RD SHARMA MATHS (ENGLISH)

## MEASURES OF CENTRAL TENDENCY

## Others

1. The following observations have been arranged
in ascending order. If the median of the data is

63, find the value of $x$ :
$29,32,48,50, x, x+2,72,78,84,95$

## D Watch Video Solution

2. Find the mode of the following data in each
case:
$14,25,14,28,18,17,18,14,23,22,14,18$

## D Watch Video Solution

3. Find the mode for the following series: 7.5, 7.3,
$7.2,7.2,7.4,7.7,7.7,7.5,7.3,7.2,7.6,7.2$

## - Watch Video Solution

4. Find the mode for the following series: $2.5,2.3$
,2.2, 2.2, 2.4, 2.7, 2.7, 2.5, 2.3, 2.2, 2.6, 2.2

## (D) Watch Video Solution

5. Find the median of the following values: 37,31 ,
$42,43,46,25,39,45,32$.
(D) Watch Video Solution
6. The following observations have been arranged in ascending order. If the median of the data is 63, find the value of $x$ : $29,32,48,50, x, x+2,72,78,84,95$

## D Watch Video Solution

7. The sums of the deviations of a set of $n$ values
$x_{1}, x_{2}, ; x_{n}$ measured from 15 and -3 are -90
and 54 respectively. Find the value of $n$ and mean.
8. Find the values of n and $\bar{X}$ in each of the following cases: (i) $\sum_{i=1}^{n}\left(x_{1}-12\right)=-10$ and $\sum_{i=1}^{n}\left(x_{1}-3\right)=62$ (ii) $\sum_{i=1}^{n}\left(x_{1}-10\right)=30$ and $\sum_{i=1}^{n}\left(x_{1}-6\right)=150$

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9. The mean of 5 number is 18 . If one numbers is excluded, their mean is 16 . Find the excluded number.
10. The mean weight per student in a group of 7 students is 55 kg . The individual weights of 6 of them (in kg ) are $52,54,55,53,56$ and 54 . Find the weight of the seventh student.

## - Watch Video Solution

11. The sum of the deviations of a set of $n$ values
$x_{1}, x_{2}, \ldots \ldots \ldots x_{n}$ measured from 50 is-10 and the
sum of deviations of the values from 46 is
70.Find the values of $n$ and the mean.

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12. If $x_{1}, x_{2}, \ldots \ldots, x_{n}$ are n values of a variable
$X$ such that $\sum_{i=1}^{n}\left(x_{i}-2\right)=110 \quad$ and
sum_ $(i=1)^{\wedge} n\left(x_{-} i-5\right)=20^{\circ}$. Find the value of $n$ and the mean.
13. If the mean of five observation
$x, x+2, x+4, x+6, x+8$ is 11 , find the mean of first three observations.

## D Watch Video Solution

14. The mean of 5 number is 18 . If one numbers is
excluded, their mean is 16 . Find the excluded number.
15. The mean of 16 numbers is 8 . If 2 is added to every number, what will be the new mean?

## (D) Watch Video Solution

16. The mean of 10 numbers is 20 . If 5 is subtracted from every number, what will be the new mean?
17. Find the mean of the following distribution: x : 4691015 f: 5101078

## (D) Watch Video Solution

18. If the mean of the following distribution is 6 ,
find the value of $\mathrm{p} . \mathrm{x}: 24610 p+5 \mathrm{f}: 32312$

## D Watch Video Solution

19. Five coins were simultaneously tossed 1000 times and at each toss the number of heads were
observed. The number of tosses during which $0,1,2,3,4$ and 5 heads were obtained are shown in the table below. Find the mean number of heads per toss.

## D Watch Video Solution

20. Find the median of the following data: 25,34 ,
$31,23,22,26,35,28,20,32$
21. Find the value of $p$, if the mean of the following distribution is 7.5. x: 35791113 f: 68 15 p 84

## (D) Watch Video Solution

22. Find the missing frequencies in the following frequency distribution if it is known that the mean of the distribution is 1.46 . No. of accident
(x) 0
1
2
3
4
5
Total Frequency (f):
```
46 ? ? 25 10
5 200
```


## D Watch Video Solution

23. The mean of 16 items was found to be 30 . On rechecking, it was found that two items were wrongly taken as 22 and 18 instead of 32 and 28, respectively. Find correct mean.
24. The mean monthly salary of 10 members of a group is Rs. 1445, one more member whose monthly salary is Rs. 1500 has joined the group.

Find the mean monthly salary of 11 members of the group.

## (D) Watch Video Solution

25. Find the mean of the following distribution:
x: 4691015
f: 5101078
26. Following table shows the weights of 12 students:

Weight (in gs): 6770727375
No. of Students: 43221

Find the mean weight.

## D Watch Video Solution

27. If the mean of $n$ observation
$a x_{1}, a x_{2}, a x_{3}, a x_{n}$ is $a \bar{X} \quad$, show that

$$
\left(a x_{1}-a \bar{X}\right)+\left(a x_{2}-a \bar{X}\right)++\left(a x_{n}-a \bar{X}\right)=0
$$

28. If the mean of $6,4,7, p$ and 10 is 8 , find the value of $p$.

## (D) Watch Video Solution

29. Find the sum of the deviations of the variate
values $3,4,6,8,14$ from their mean.
(D) Watch Video Solution
30. The mean of 40 observations was 160 . It was
detected on rechecking that the value of 165 was
wrongly copied as 125 for computation of mean.
Find the correct mean.

## D Watch Video Solution

31. If the heights of 5 persons are $144 \mathrm{~cm}, 152 \mathrm{~cm}$,
$151 \mathrm{~cm}, 158 \mathrm{~cm}$ and 155 cm respectively. Find the mean height.
32. Find the arithmetic mean of first 6 natural numbers.

## D Watch Video Solution

33. Find the arithmetic mean of first ten odd natural numbers

## (D) Watch Video Solution

34. The weights (in kg ) of 15 students are: 31,35 ,
$27,29,32,43,37,41,34,28,36,44,45,42,30$. Find
the median. If the weight 44 kg is replaced by 46 kg and 27 kg by 25 kg , find the new median.

## D Watch Video Solution

35. Find the median of the following data: 19, 25 ,

59, 48, 35, 31, 30, 32, 51.

If 25 is replaced by 52 , what will be the new median.
36. Find the mode from the following data: 110,120,130,120,110,140,130,120,140,120

## (D) Watch Video Solution

37. If the heights of 5 persons are $144 \mathrm{~cm}, 152 \mathrm{~cm}$,
$151 \mathrm{~cm}, 158 \mathrm{~cm}$ and 155 cm respectively. Find the mean height.
38. Find the arithmetic means of first 6 natural numbers.

## D Watch Video Solution

39. Find the arithmetic mean of first ten odd natural numbers.

## D Watch Video Solution

40. If the mean of $n$ observations ax1, ax2, ax3, ....,
axn is $a X$ show that $(a x 1-a X)+(a x 2-a X)+\ldots . .+(a x n$
$-a X)=0$

## - Watch Video Solution

41. If the mean of $6,4,7, p$ and 10 is 8 , find the value of $p$

## - Watch Video Solution

42. Find the sum of the deviations of the variate
values $3,4,6,8,14$ from their mean.

- Watch Video Solution

43. The mean of 40 observations was 160 . It was detected on rechecking that the value of 165 was wrongly copied as 125 for computation of mean.

Find the correct mean.

## D Watch Video Solution

44. The mean of 100 items was found to be 30 . If
at the time of calculation two items were
wrongly taken as 32 and 12 instead of 23 and 11,
find the correct mean.
45. The mean monthly salary of 10 members of a group is Rs. 1445, one more member whose monthly salary is Rs. 1500 has joined the group.

Find the mean monthly salary of 11 members of the group.

## (D) Watch Video Solution

46. The mean of 10 number is 20 . If 5 is
subtracted from every number, what will be the new mean?

## - Watch Video Solution

47. The mean of 16 numbers is 8 . If 2 is added to every number, what will be the new mean?

## - Watch Video Solution

48. The mean of 5 number is 18 . If one numbers is
excluded, their mean is 16 . Find the excluded number.
49. If the mean of five observations $x, x+2, x+4$
$, x+6, x+8$ is 11 , find the mean of first three observations.

## (D) Watch Video Solution

50. If $x 1, x 2, x 3, \ldots . . x n$ are $n$ values of a variable $X$ such that Find the value of $n$ and the mean.
51. The sum of the deviations of a set of $n$ values $x_{1}, x_{2}, x_{n}$ measured from 50 is- 10 and the sum of deviations of the values from 46 is 70. .Find the values of $n$ and the mean.

## D Watch Video Solution

52. If the heights of 5 persons are $140 \mathrm{~cm}, 150 \mathrm{~cm}$, $152 \mathrm{~cm}, 158 \mathrm{~cm}$ and 161 cm respectively, find the mean height.
53. Find the mean of $994,996,998,1002$ and 1000

## - Watch Video Solution

54. Find the mean of first five natural numbers.

## (D) Watch Video Solution

55. Find the mean of all factors of 10.
( Watch Video Solution
56. Find the mean of first 10 even natural numbers.

## (D) Watch Video Solution

57. Find the mean of $x, x+2, x+4, x+6, x+8$

## D Watch Video Solution

58. Find the mean of first five multiples of 3.
59. Following are the weights (in kg ) of 10 new born babies in a hospital on a particular day: 3.4, 3.6, 4.2, 4.5, 3.9, 4.1, 3.8, 4.5, 4.4, 3.6. Find the mean

## D Watch Video Solution

60. The percentage of marks obtained by students of a class in mathematics are: 64, 36, 47,
$23,0,19,81,93,72,35,3,1$. Find their mean.
61. The numbers of children in 10 families of a locality are: $2,4,3,4,2,3,5,1,1,5$. Find the mean number of children per family.

## - Watch Video Solution

62. If $M$ is the mean of $x 1, x 2, x 3, x 4, x 5$ and $x 6$, prove that $(x 1-M)+(x 2-M)+(x 3-M)+(x 4-$ $M)+(x 5-M)+(x 6-M)=0$
63. Duration of sunshine (in hours) in Amritsar
for first 10 days of August 1997 as reported by
the Meteorological Department are given below:
9.6, 5.2, 3.5, 1.5, 1.6, 2.4, 2.6, 8.4, 10.3, 10.9 Find the
mean

## D Watch Video Solution

64. Explain, by taking a suitable example, how the arithmetic mean alters by (i) adding a constant to each term, (ii) subtracting a constant from each them, (iii) multiplying each term by a
constant and (iv) dividing each term by a nonzero constant

## D Watch Video Solution

65. The mean of marks scored by 100 students
was found to be 40. Later on it was discovered that a score of 53 was misread as 83 . Find the correct mean.
66. The traffic police recorded the speed (in $\mathrm{km} / \mathrm{hr}$ ) of 10 motorists as $47,53,49,60,39,42,55$,

57, 52, 48. Later on an error in recording instrument was found. Find the correct average speed of the motorists if the instrument recorded $5 \mathrm{~km} / \mathrm{hr}$ less in each case.

## D Watch Video Solution

67. The mean of five numbers is 27 . If one number is excluded, their mean is 25 .Find the excluded number.

## - Watch Video Solution

68. The mean weight per student in a group of 7 students is 55 kg . The individual weights of 6 of them (in kg ) are $52,54,55,53,56$ and 54 . Find the weight of the seventh student.

## - Watch Video Solution

69. The mean weight of 8 numbers is 15 . If each number is multiplied by 2 , what will be the new mean?

## - Watch Video Solution

70. The mean of 5 numbers is 18 . If one number is
excluded, their mean is 16 . Find the excluded number.

## D Watch Video Solution

71. The mean of 200 items was 50 . Later on, it was
discovered that the two items were misread as

92 and 8 instead of 192 and 88 . Find the correct mean.
72. The sums of the deviations of a set of $n$ values $x_{1}, x_{2}, ; x_{n}$ measured from 15 and $-3 a r e-90$ and 54 respectively. Find the value of $n$ and mean.
(D) Watch Video Solution
73. Find the mean of the following $3,4,6,7,8,14$.
74. If $X^{-}$is the mean of the ten natural numbers
$x 1$,x 2 , 3 ,..., x 10 , show that ( $\mathrm{x} 1-\mathrm{X}^{-}$) +(x $2-$
$\left.\mathrm{X}^{-}\right)+\ldots+\left(\mathrm{x} 10-\mathrm{X}^{-}\right)=0$.
(D) Watch Video Solution
75. Find the mean of the following : $2,5,8$

## D Watch Video Solution

76. Following table shows the weights of 12 students: Find the mean weight.
77. Find the mean of the following: 1,5,4,3,2

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78. If the mean of the following distribution is 6 ,
find the value of $p$

- Watch Video Solution

79. Find the value of if the mean of the following distribution is 7.5

## D Watch Video Solution

80. Find the missing frequencies in the following
frequency distribution if it is known that the mean of the distribution is 1.46 . No. of accident
(x), 0, 1, 2, 3, 4, 5, Total Frequency is 200 and no. of days (f): 46 , ?, ?,

25, 10, 5
81. Calculate the mean for the following distribution:
(D) Watch Video Solution
82. Find the mean of the following data:
(D) Watch Video Solution
83. The mean of the following data is 20.6 . Find the value of $p$
84. If the mean of the following data is 15 , find

## (D) Watch Video Solution

85. Find the value of for the following distribution whose mean is 16.6.

- Watch Video Solution

86. Find the value of $p$ for the following distribution whose mean is $12.58 . x: 5,8,10,12$, $\mathrm{p}, 20,25$ and $f: 2,5,8,22,7,4,2$

## D Watch Video Solution

87. Find the missing frequency $(p)$ for the following distribution whose mean is $7.68 x: 35$
$791113 f: 6815 p 84$
88. Find the value of mean of the following-

20,10,30

## (D) Watch Video Solution

89. Find the mean of the following: 10,12,14,16

## ( Watch Video Solution

90. Candidates of four schools appear in a mathematics test. The data were as follows

School, No. of Candidates, Average Score I II III IV,

6048 Not available 40, 75805550 If the average score of the candidates of all the four schools is

66 , find the number of candidates that appeared from school III.

## D Watch Video Solution

91. Five coins were simultaneously tossed 1000
times and at each toss the number of heads were
observed. The number of tosses during which
$0,1,2,3,4$ and 5 heads were obtained are shown in the table below. Find the mean number of heads per toss.

## D Watch Video Solution

92. Find the missing frequencies in the following frequency distribution if it is known that the mean of the distribution is 50. $x: 1030507090$ $f: 17 f_{1} 32 f_{2} 19$ Total 120.

## (D) Watch Video Solution

93. Find the median of the following data: 25,34 ,
$31,23,22,26,35,28,20,32$
94. Find the median of the following values: 37 , $31,42,43,46,25,39,45,32$

## D Watch Video Solution

95. The median of the observation
$11,12,14,18, x+2, x+4,30,32,35,41$ arranged in ascending order is 24 . Find the value of $x$.
96. Find the median of the following data: $19,25,59,48,35,31,30,32,51$. If 25 is replaced by 52 , what will be the new median.

## D Watch Video Solution

97. Find the median of the following data 83,37 ,
$70,29,45,63,41,70,34,54$
( Watch Video Solution
98. Find the median of the following data 133,73 , $89,108,94,104,94,85,100,120$

## ( Watch Video Solution

99. Find the median of the following data 31,38 ,
$27,28,36,25,35,40$

## D Watch Video Solution

100. Find the median of the following data 15,6 ,
$16,8,22,21,9,18,25$

## - Watch Video Solution

101. Find the median of the following data 41,43 ,

127, 99, 71, 92, 71, 58, 57

## (D) Watch Video Solution

102. Find the median of the following data 25,34 ,
$31,23,22,26,35,29,20,32$

- Watch Video Solution

103. Find the median of the following data 12,17, $3,14,5,8,7,15$

## (D) Watch Video Solution

104. Find the median of the following data 92,35 ,
$67,85,72,81,56,51,42,69$

## (D) Watch Video Solution

105. 

Numbers
$50,42,35,2 x+10,2 x-8,12,11,8$ are
written in descending order and their median is

25 , find $x$.

## D Watch Video Solution

106. Find the median of the following observations: $46,64,87,41,58,77,35,90,55,92$,
107. If 92 is replaced by 99 and 41 by 43 in the above data, find the new median?

- Watch Video Solution

107. Find the median of the following data: 41,43 ,
$127,99,61,92,71,58,57$ if 58 is replaced by 85 ,
what will be the new median.

## (D) Watch Video Solution

108. The weights (in kg ) of 15 students are: 31,35 ,
$27,29,32,43,37,41,34,28,36,44,45,42,30$. Find
the median. If the weight 44 kg is replaced by 46 kg and 27 kg by 25 kg , find the new median.

## Watch Video Solution

109. The following observations have been arranged in ascending order. If the median of the data is 63, find the value of $x$ : $29,32,48,50, x, x+2,72,78,84,95$

## (D) Watch Video Solution

110. Find the mode from the following data: 110, $120,130,120,110,140,130,120,140,120$
111. Find the mode for the following series: 2.5 ,
2.3, 2.2, 2.4, 2.7, 2.7, 2.5, 2.3, 2.2, 2.6, 2.2

## (D) Watch Video Solution

112. Find out the mode of the following marks obtained by 15 students in a class: Marks: 4, 6, 5, $7,9,8,10,4,7,6,5,9,8,7,7$

D Watch Video Solution
113. Find the mode from the following data: 125, $175,225,125,225,175,325,125,375,225,125$

## (D) Watch Video Solution

114. Find the mode for the following series: 7.5,
$7.3,7.2,7.2,7.4,7.7,7.7,7.5,7.3,7.2,7.6,7.2$

## D Watch Video Solution

115. Find the mode of the following data in each case: $14,25,14,28,18,17,18,14,23,22,14,187,9$,
$12,13,7,12,15,7,12,7,25,18,7$

## - Watch Video Solution

116. The demand of different shirt sizes, as obtained by a survey, is given below: Size:, 37,38,
$39,40,41,42,43,44$, total No. of Person (wearing
it):, $26,39,20,15,13,7,5,125$ Find the modal shirt sizes, as observed from the survey.
117. If the ratio of mean and median of a certain data is $2: 3$, then find the ratio of its mode and mean.

## (D) Watch Video Solution

118. If the ratio of mode and median of a certain
data is $6: 5$, then find the ratio of its mean and median.

# 119. <br> If <br> the <br> mean 

$x+2,2 x+3,3 x+4,4 x+5$ is $x+2$, find $x$

## (D) Watch Video Solution

120. The arithmetic mean and mode of a data are

24 and 12 respectively, then find the median of the data.
121. If the difference of mode and median of a data is 24 , then find the difference of median and mean.

## D Watch Video Solution

122. If the median of scores
$\frac{x}{2}, \frac{x}{3}, \frac{x}{4}, \frac{x}{5}$ and $\frac{x}{6}($ where $x>0)$ is $6 \quad$, then
find the value of $\frac{x}{6}$.
(D) Watch Video Solution
123. If the mode of scores
$3,4,3,5,4,6,6, x$ is 4 , find the value of $x$.

## D Watch Video Solution

124. If the median of $20,25,28, x, 33,34 i s 29$
, find the maximum possible value of $x$.

## D Watch Video Solution

125. For the set of numbers $5,6,6,6,7,7$ and 12 , find mode

## - Watch Video Solution

126. Which one of the following is not a measure of central value: (a) Mean $\quad$ (b) Range

Median (d) Mode
(D) Watch Video Solution
127. The mean of $n$ observations is $x$. If $k$ is added
to each observation, then the new mean is $X$ (b)
$X+k$ (c) $X-k$ (d) $k X$
128. The mean of $n$ observations is $X$. If each observation is multiplied by $k$, the mean of new observation is $k X$ (b) $\frac{X}{k}$ (c) $X+k$ (d) $X-k$

## D Watch Video Solution

129. The mean of a set of seven numbers is 81 . If one of the numbers is discarded, the mean of the remaining numbers is 78 . The value of discarded
number is 98
(b) 99
(c) 100
(d)

101

## - Watch Video Solution

130. For which set of numbers do the mean, median and mode all have the same value? (a)2, 2, 2, 2,4 (b) 1,3, 3, 3, 5 (c) 1, 2, 3, 5,6 (d) $1,1,1,2,5$

## D Watch Video Solution

131. For the set of numbers $2,2,4,5$ and 12 , find mode
132. If the arithmetic mean of $7,5,13, x$ and 9 is 10 , then the value of $x$ is
(a) 10
(b) 12
(c) 14
(d) 16
(D) Watch Video Solution
133. If the mean of five observations
$x, x+2, x+4, x+6, x+8 i s 11$, then the
mean of first three observations is 9 (b) 11 (c) 13
(d) none of these

## D Watch Video Solution

134. Mode is
(a)least frequent value
(b) middle most value
(c) most frequent value
(d) none of these
135. The following is the data of wages per day: 5 ,
$4,7,5,8,8,8,5,7,9,5,7,9,10,8$. The mode of the data is: 7
(b) 5
(c) 8
(d) 10

## D Watch Video Solution

136. The empirical relation between mean, mode and median is

Mode $=3$ Median -2 Mean

Median $=3$ Mode -2 Mean
Mean $=3$ Median -2 Mode

## - Watch Video Solution

137. The median of the following data:
$0,2,2,2,-3,5,-1,5,5,-3,6,6,5,6$
is (a) $0(\mathrm{~b})-1.5$ (c) 2 (d) 3.5

## - Watch Video Solution

138. The mean of $a, b, c, d$ and $e$ is 28 . If the mean of $a, c$ and $e$ is 24 , what is the mean of $b$ and $d$ ?
(a) 31
(b) 32
(c) 33
(d) 34

## D Watch Video Solution

139. The algebraic sum of the deviations of a set of $n$ values from their mean is (a) 0 (b) $n-1$ (c) $n$ (d) $n+1$

## D Watch Video Solution

140. $A, B$ are two sets of values of $x: A: 3,7$, ,
$B: 12,8$ Mean of $A=$ Mean of $B$ then True
or False

## D Watch Video Solution

