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Mode

1. Find out the mode of the following data. 15, 12, 10, 11, 13, 19, 22, 13, 16, 21, 20?

Solution:

The data given is 15, 12, 10, 11, 13, 19, 22, 13, 16, 21, 20.

By definition, mode is the number that occurs most often in a data set.

As the number 13 occurs 2 times more than any other number in the given data set. Therefore, the mode is 13.

2. What is the mode of these values? 39, 42, 34, 37, 39, 44, 41

Solution:

The given values are 39, 42, 34, 37, 39, 44, 41.

∴ Mode is the number that occurs most often in a data set.

The value 39 occurs 2 times more than any other number in the given values. Therefore, the mode is 39.

3. The manager of a video shop recorded the number of blank tapes sold per day in 2 weeks below.
132, 121, 119, 116, 130, 121, 131, 117, 119, 135, 121, 129, 119, 134.
Find Mode.

Solution:

The number of blank tapes sold per day in 2 weeks are 132, 121, 119, 116, 130, 121, 131, 117, 119, 135, 121, 129, 119, 134.

∴ Mode is the number that occurs most often in a data set.

The numbers 119 and 121 occur 3 times

(a)

more than other number in the given data.

Therefore, mode is 119 and 121.

4. Ten earthquakes were measured and their magnitudes were as below, 7.0, 6.2, 7.7, 8.0, 6.4, 7.2, 5.4, 6.6, 7.5, 5.9. Find the mode.

Solution:

The measured magnitudes are 7.0, 6.2, 7.7, 8.0, 6.4, 7.2, 5.4, 6.6, 7.5, 5.9

∴ Mode is the number that occurs most often in a data set.

None of the numbers in the measured magnitudes occur more than once (no number repeats). Therefore, there is no mode.

5. If the value of Median is 20, and Mean is 22.5 then find the value of Mode?

Solution:

According to the statement of question,

$$\text{Median} = 20$$

$$\text{Mean} = 22.5$$

$$\text{Mode} = ?$$

$$\therefore \text{Mode} = 3\text{Median} - 2\text{Mean}$$

$$= 3(20) - 2(22.5)$$

$$= 60 - 45$$

$$= 15$$

Mode is 15.

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Median

1. 7 teenagers received the allowances listed here. 15, 10, 12, 18, 14, 15, 8. What is the median allowance?

Solution:

According to the statement of question, the allowance received by teenagers 15, 10, 12, 18, 14, 15, 8.

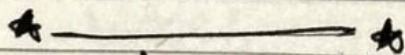
Median = ?

∴ Median is the middle value when a data set is arranged in an ascending order.

Writing data in ascending order, we get
8, 10, 12, 14, 15, 15, 18

As the number of values in data is odd, eliminate three values from both left and right side. The remaining value is median.

Therefore, median is 14.



2. Find the median number of magazines purchased in a store by 6 customers. 1, 7, 4, 2, 3, 4?

Solution:

Given data set is 1, 7, 4, 2, 3, 4.

Median = ?

∴ Median is the middle value when a data set is arranged in an ascending order.

By writing data in ascending order, we get

1, 2, 3, 4, 4, 7

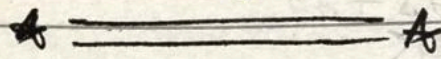
As the number of values in data is even, eliminate 2 values from both right and left side then add the

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middle two values and divide it by 2 to find median.

$$\begin{aligned}\rightarrow \text{Median} &= \frac{3+4}{2} \\ &= \frac{7}{2} \\ &= 3.5\end{aligned}$$

The median number of magazines purchased in a store by 6 customers is 3.5.



Range

1. Find the range of these distances run by 6 marathon runners. 10 km, 15 km, 12 km, 14 km, 8 km, 16 km?

Solution:

Distances run by 6 marathon runners
10 km, 15 km, 12 km, 14 km, 8 km, 16 km

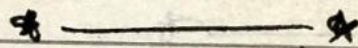
Range = ?

By writing data in ascending order, we get
8 km, 10 km, 12 km, 14 km, 15 km, 16 km.

∴ Range is the difference between the highest value and the lowest value.

$$\begin{aligned}\rightarrow \text{Range} &= \text{Maximum distance} - \text{Minimum distance} \\ &= 16 - 8 \\ &= 8 \text{ km}\end{aligned}$$

The range of distances run by 6 marathon runners is 8 km.



2. In a game, points were won and lost, represented by integers. What is the range of points given below. -14, +21, -17, +25, 0, -19, +11, -20, +18?

Solution:

The points given are
-14, +21, -17, +25, 0, -19, +11, -20, +18

Range = ?
By writing the points in ascending order,
we get

$-20, -19, -17, -14, 0, +11, +18, +21, +25$
 \therefore Range is the difference between the
highest value and the lowest value.

$$\begin{aligned}\rightarrow \text{Range} &= \text{Maximum integer} - \text{Minimum integer} \\ &= 25 - (-20) \\ &= 25 + 20 \\ &= 45\end{aligned}$$

The range of points, won and lost in game,
is 45 integers.

3. The range of a set of numbers
is 1362, the greatest number is
2172. What is the least number?

Solution:

$$\text{Range} = 1362$$

$$\text{Greatest number} = 2172$$

$$\text{Least number} = ?$$

\therefore Range is the difference between the
highest value and the lowest value.

$$\text{Range} = \text{Greatest number} - \text{Least number}$$

$$\rightarrow \text{Least number} = \text{Greatest number} - \text{Range}$$

$$= 2172 - 1362$$

$$= 810$$

The least number is 810.