

The average monthly income of P and Q is RS 5050. The average monthly income of Q and R is 6250, and average income of P and R is R=5200. Find the income of P.

Date

Average monthly income of P, Q = 5050  
monthly income of Q, R = 6250  
Average income of P and R = 5200  
Find the income of P = ?

Formula

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

Solution

$$\text{Average} = \frac{\text{Sum}}{\text{Num}}$$
$$5050 = \frac{\text{sum}}{2}$$

$$(P + Q = 10100) \quad (1)$$

income of Q & R

$$\text{Average} = \frac{\text{Sum}}{\text{Num}}$$

$$6250 = \frac{\text{Sum}}{2}$$

$$\boxed{\text{Sum} = 12500} \text{ --- (i)}$$

average of P and R --- (ii)

$$\text{Average} = \frac{\text{Sum}}{\text{Sum}}$$

$$5200 = \frac{\text{Sum}}{2}$$

$$\text{P and R} = 10400 \text{ --- (iii)}$$

Adding these value.

$$P + Q + Q + R + R + P \text{ --- (i)}$$

$$2P + 2Q + 2R \text{ --- (ii)}$$

$$2(P + Q + R) =$$

$$2(10400 + 12500 + 10100)$$

$$P + Q + R = \frac{33000}{2} = 16500$$

① Find the average 4, 7, 10

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

$$\text{Average} = \frac{4+7+10}{3}$$

$$A = \frac{21}{3} = 7$$

7 is the average of given number

(2) The average marks of 3 batches of 55, 60 and 45 students respectively is 50, 55, 60. Then the average marks of each student

Sol: Data

Average marks of three batches = 50, 55, 60

Number of students = 55, 60, 45

Average marks of each student = ?

Formula

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

$$\text{Sum} = \frac{\text{Sum}}{\text{Num}}$$

$$\text{Sum} = \frac{\text{Average} \times \text{Num of observation}}{\text{Total No of student}}$$

$$\text{Sum} = \frac{(35 \times 150) + (60 \times 55) + (45 \times 60)}{450 + 55 + 60}$$

$$\text{Sum} = \frac{2150 + 3300 + 2700}{160}$$

$$\text{Sum} = \frac{8750}{160}$$

$$\text{Sum} = 54$$

average marks of every students about 54 of each batch.

### Question 3

The average weight of A, B, C is

45 kg. if the average weight of A, B  
is 40 kg and that of B and C is  
43 kg then find the weight of  
B.

Date =

$$\text{weight of A, B, C} = 45$$

$$\text{weight of A, B} = 40$$

$$\text{w of B, C} = 43$$

find the weight of B = ?

Formula

$$\text{Average} = \frac{\text{Sum}}{\text{Num.}}$$

$$45 = \frac{\text{sum}}{3}$$

$$\boxed{\text{sum} = 135} \quad \text{--- (1)}$$

find the value of A, B

$$\text{ii- Average} = \frac{\text{sum}}{\text{Num}}$$

$$40 = \frac{\text{sum}}{2}$$

$$\boxed{\text{sum} = 80} \quad \text{--- (2)}$$

Now find the value of  
B, C

$$43 = \frac{\text{Sum}}{2}$$

$$\boxed{\text{Sum} = 86} \quad \text{--- (3)}$$

Given the weight of B

Adding the value of (A+B) + (B+C)

$$A+B+B+C = 80+86$$

$$A+2B+C = 166 \quad \text{--- (i)}$$

$$A+B+C = 135 \quad \text{--- (ii)}$$

Subtract these value

$$B = 166 - 135 = \boxed{31 \text{ Kg}}$$

The average weight of B is 31 Kg.

Question No  
4

The average of two numbers A and B is 20. that of B and C is 19 and C and A is 21. what is the value of A?

Data -

Value of A and B = 20

Value of B and C = 19

Value of C and A = 21

find value of A = ?

Formulas

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

$$20 = \frac{\text{Sum}}{2}$$

$$\boxed{\text{Sum} = 40} \quad \text{--- (i)}$$

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

$$19 = \frac{\text{Sum}}{2}$$

$$\boxed{\text{Sum} = 38} \quad \text{--- (ii)}$$

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

$$\bar{x} = \frac{\text{sum}}{2}$$

$$\text{sum} = 42 \quad \text{--- (iii)}$$

$$A + B + B + C + 40 + 38 + 42$$

$$2(A + B + C) = 120$$

$$A + B + C = \frac{120}{2} = 60 \quad \text{--- (iv)}$$

According to question equation  
A is subtracted from 2  
value.

$$A = 60 - 38$$

$$A = 22$$

The average Num of A is  
22.

When from 5 persons, one  
with 60 kg weight left and  
a new man joined the  
team, the average weight  
increased by 2 kg. weight  
of new man.



Data

Members in team = 5

weight average = 60kg

increase weight = 2kg

New man weight = ?

The average man of team =  $5 \times 2$

= 10kg

Ans = Total W + New

60 + 10

70kg

The new weight increased  
70kg

Question

The average monthly salary of 10 employees working in Company is Rs. 6835 and average monthly salary of 3 women employees among them is Rs. 5498. What is the average monthly

Salary of the rest employees

Date

Monthly salary of 10 employees = 6835  
the average 3 women employ = 5428  
What is the salary of 7 = ?

Formula

$$\text{Average} = \frac{\text{sum of observation}}{\text{Num of observation}}$$

$$6835 = \frac{\text{sum}}{10}$$

$$\text{sum} = 6835 \times 10$$

$$\boxed{\text{sum} = 68350} \quad \text{--- (i)}$$

$$\text{Average} = \frac{\text{sum of observation}}{\text{Num of observation}}$$

$$5428 = \frac{\text{sum}}{3}$$

$$\boxed{\text{sum} = 16284} \quad \text{--- (ii)}$$

Subtract the equation (i and ii)

$$\text{sum} = 68350 - 16284$$

$$\boxed{\text{sum} = 52066}$$

The rest of 7 employees salary  
 $A = \frac{\text{Total Salary}}{\text{Number}}$   
Average =  $\frac{52066}{7}$

$$\text{Average} = \boxed{7438}$$

The salary of remaining 7 employees are 7438

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Q9

The average age of 25 boys is 15 years. If the average age of last 12 boys are 14.5 and 15.5 years respectively. What is the age of thirteenth boy?

Data

average age of 25 boys = 15 yr  
if average age of last 12 boys = 14.5 yr  
age of thirteenth boy = ?

Formula

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

$$25 = \frac{\text{sum}}{15}$$

$$\boxed{\text{sum} = 375} \quad \text{(i)}$$

Age of 12 boys as 14.5, 15.5

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

add the value of 14.5, 15.5 = 30

$$A = \frac{\text{sum}}{\text{Num}}$$

$$12 = \frac{\text{sum}}{30}$$

$$\text{sum} = 360 \quad \text{(ii)}$$

subtract the value of (i) from (ii)

$$\text{Average Age} = \frac{\text{age of 15 boy} - \text{Age of 12}}{\text{Age of twelve}}$$

$$= 375 - 360 = 15$$

The age of thirteenth boy is 15 years

Median

1, 9, 4, 7, 9, 12, 14, 15

9 is the median of given value.

There are 9 students in a group having ages 15, 15, 16, 16, 17, 17, 18, 18. Calculate mean, median, mode and range also define above mentioned terms?

Solution:

Data

ages = 15, 15, 16, 16, 17, 17, 18, 18

Mean = mean is the average of object which is obtained by adding the sum divided by total

$$\text{mean} = \frac{15+15+16+16+17+17+18+18}{8}$$

$$\text{Mean} = \frac{133}{8}$$

$$\text{Mean} = 16.62$$

Median

Median is the central value of given data. Firstly arrange data in an arrange sequence. Then if it is even its central in a odd value formula is used.

$$\text{Median} = \left( \frac{n+1}{2} \right)$$

$$\text{Median} = 15, 15, 16, 16, 17, 17, 18, 18$$

$$\left( \frac{33+1}{2} \right) = \frac{34}{2}$$

$$\text{Median} = 17$$

Mode most repeated Num in set

$$15, 15, 16, 16, 17, 17, 18, 18$$

$$\text{Mode} = 16, 17, 18$$

Range

Range is more and difference of minimum value.

$$\text{Range} = \text{max} - \text{min}$$

$$= 15 - 11$$

$$\text{Range} = 4$$

The front row of the movie theater has 23 seats. If you were asked sit in the seat that occupied the median position on which seat you have to sit?

Date

Front row contain = 23 seats

If you seat on median position num of chairs = ?

$$\text{formula} = \left( \frac{n+1}{2} \right)$$

$$\frac{23+1}{2}$$

$$\text{Median} = \frac{17 + 24}{2}$$

$$\boxed{\text{Median} = 19}$$

The Number of Chair You Set on Row is 19.

Q             
A recorded student her scores on weekly math quizzes that were marked out of a possible 10 point. Her scores were as follows.

8, 5, 8, 5, 7, 6, 7, 7, 5, 7, 5, 5, 6, 6, 9, 9, 8, 9, 7

9, 9, 6, 8, 6, 6, 7 what is mode of her score on the weekly math quizzes?

Date

Score marks = 8, 5, 8, 5, 7, 6, 7, 7, 5, 7, 5, 5

6, 6, 9, 9, 8, 9, 7, 9, 9, 6, 8

6, 6, 7

The mode of given value  
 $\boxed{\text{are } 9, 6}$



Rashid buys three books for Rs 16 each and 4 books for Rs 23. what is the average price of books

Given

$$\text{Price of 3 books} = 16$$

$$\text{Price of 4 books} = 23$$

$$\text{average price} = ?$$

Formula

$$\text{Average} = \frac{\text{Sum of observation}}{\text{Num of observation}}$$

$$A = \frac{\text{Sum}}{3}$$

$$\text{Average} = \frac{16}{3}$$

The price of 4 books are 23

$$A = \frac{\text{Sum}}{\text{Num}}$$

$$23 = \frac{\text{sum}}{4}$$
$$92$$

add the equations and  
(ii)

$$48 + 92 = 140$$

The average price of both  
books is

$$A = \frac{\text{Sum of observation}}{\text{Num}}$$

$$= \frac{140}{7} = 20$$

The average price of books  
is 20