Average

Average Formulas:

- Average = (Sum of values)/(Total number of values)
- Average of first n natural numbers = (n+1)/2
- Average of first n even numbers = n+1
- Average of first n odd numbers = n

Average Questions and Solutions

Q.1: Find the average of the following set of numbers. 65, 85, 70, 90, and 105.

Solution: Given, the set of numbers is 65, 85, 70, 90, and 105.

Average = Sum of numbers/total numbers

Average = (65+85+70+90+105)/5

= 415/5

= 83

Q.2: The sum of 10 numbers is 550. Find their average number.

Solution: Given, the sum of 10 numbers is 550.

Average = Sum/Total numbers

= 550/10

= 55

Q.3: What is the average of natural numbers from 1 to 67?

Solution: Given, natural numbers 1 to 67.

Average of n natural numbers = (n+1)/2

Here, n = 67

Average = (67+1)/2 = 68/2 = 34

Q.4: The average of 7 consecutive numbers is 20. What is the largest of these numbers?

Solution: Let the 7 consecutive numbers be x, x + 1, x + 2, x + 3, x + 4, x + 5 and x + 6,

As per the given condition;

[x + (x + 1) + (x + 2) + (x + 3) + (x + 4) + (x + 5) + (x + 6)] / 7 = 20

⇒ 7x + 21 = 140

⇒ 7x = 119

⇒ x =17

The largest number = x + 6 = 23.

Q.5: The average of 10 numbers is 23. If each number is increased by 4, what will the new average be?

Solution: Given,

Average of 10 numbers = 23

Sum/Total numbers = 23

Sum/10 = 23

Sum of the 10 numbers = 230

If each number is increased by 4, the total increase = 4 x 10 = 40

New sum = 230 + 40 = 270

Therefore, the new average = 270/10 = 27

Q.6: The average of 50 numbers is 20. If two numbers 37 and 43 are discarded, find the average of the remaining numbers.

Solution: Given,

Average of 50 numbers = 20

Sum of 50 numbers = 20 x 50 = 1000

Sum of discarded numbers = 37 + 43 = 80

Sum of remaining numbers = 1000 – 80 = 920

Now, total remaining numbers = 50 – 2 = 48

Average of remaining numbers = 920/48 = 19.17

Q.7: What is the average of the first six multiples of 4?

Solution: First six multiples of 4 is 4, 8, 12, 16, 20, 24

Average = (4+8+12+16+20+24)/6

= 84/6

= 14

Q.8: The average age of three boys is 15 years and their ages are in proportion 3:5:7. What is the age in years of the youngest boy?

Solution: Let the age of the youngest boy be x.

As per the question;

(3x+5x+7x)/3 = 15

3x+5x+7x = 45

15x = 45

x = 45/15

x = 3

Age of the youngest boy is: 3x = 3(3) = 9 years

Q.9: The average weight of a group of seven boys is 56 kg. The individual weights (in kg) of six of them are 52, 57, 55, 60, 59 and 55. Find the weight of the seventh boy.

Solution: Average weight of 7 boys = 56 kg.

Total weight of 7 boys = (56 × 7) kg = 392 kg.

Total weight of 6 boys = (52 + 57 + 55 + 60 + 59 + 55) kg

= 338 kg.

Weight of the 7th boy = (total weight of 7 boys) – (total weight of 6 boys)

= (392 – 338) kg

= 54 kg.

Therefore, the weight of the seventh boy is 54 kg.

Q.10: The mean of 25 numbers is 36. If the mean of the first numbers is 32 and that of the last 13 numbers is 39, find the 13th number.

Solution:

Mean of the first 13 numbers = 32

Sum of the first 13 numbers = (32 × 13) = 416

Mean of the last 13 numbers = 39

Sum of the last 13 numbers = (39 × 13) = 507

Mean of 25 numbers = 36

Sum of all the 25 numbers = (36 × 25) = 900

Therefore, the 13th observation = (416 + 507 – 900) = 23

Hence, the 13th observation is 23