16.09.2020 AN 2 SESSION

**AVERAGES**

**AVG = SUM / NO**

**Series is in AP**

**2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 🡪 Odd number of terms**

**2 4 6 8 10 12 14 16 18 20 22 24 26 28 🡪 Even no of terms**

**(14 + 16) / 2 = 15.**

SUM = AVG \* NO

Avg marks of 10 students is 45. Sum = 10 \* 45 = 450

45 45 45 45 45 45 45 45 45 45

Avg wt of 7 students is 43

43 43 43 43 43 43 43

1. Determine the average of the following data. 40, 19, 75, 83, 56, 33

a) 51 b) 52 c) 5 d) 53

(40 + 19 + 75 + 83 + 56 + 33) / 6 = 306 / 6 = 51

19 33 40 51 56 75 83

32 18 11 - 5 -24 -32

2. Determine the average of the following data. 35, 76, 90, 54, 15

a) 54

b) 53

c) 56

d) 55

270 / 5 = 54

3. When a young member is substituted for an old member in a group of 8 people their average age becomes same as it was 3 years ago. The incoming member is younger to the outgoing member by:

Before Substitution

No of ppl is equal to 8

Avg before substitution x

Sum of ages before substitution = 8x

After Substitution

No of ppl is equal to 8

Avg after substitution x-3

Sum of ages after substitution = 8 \*(x-3) = 8x -24

Sum of ages of 8 ppl before young guy comes in is 8x

Sum of ages of 8 ppl after young guy comes in 8x -24

Difference in ages of incoming and outgoing member is 8x –( 8x -24) =8x – 8x + 24 = 24 years

SECOND METHOD

28 20 16 32 0

24 24 24 24 29(24 + 5)

25 25 25 25 25

For the avg to increase by 1 the incoming guy must bring the same amount as average plus 1 each for everybody

Including him .

When avg of 8 ppl is x

x x x x x x x x 8 \* 3 = 24

x-3 x-3 x-3 x-3 x-3 x-3 x-3 x-3

When old person comes in

x+5 x+5 x+5 x+5 x+5 x+5 x+5 x+5 8 \* 5 =40

x+40

4. The average score of boys in an examination in a school is 71 and that of the girls is 73. The average score of the school is 71.8. The ratio of the number of boys to that of the girls that appeared in the examination is

71 73

71.8

1.2 .8

3 : 2

5. After being set up, a company manufactured 6000 scooters in the third year and 7000 scooters in the seventh year. Assuming that the production increases uniformly by a fixed number every year, what is the production in the tenth year?

3 rd year = 6 000

7 th year = 7 000

Increase % for 4 yrs = (1 000 /6 000) \* 100 =16.66 %

6. If a worker in a factory receives one rupee on the first day from the second days onwards his wage is increased by one rupee every day. What is the total amount of wage he receives after 40 days?

1 + 2 + 3 + 4 + 5 + 6 …40

40 \* 41 / 2= 820

n ( n+1) / 2