Average

1. The average marks of 35 boys of section A of class x is 60 whereas the average marks of 40 boys of section B of class x is 45. The average marks for both the section combined together is :
   (a) 45 (b) 43.15
   (c) 22.18 (d) 48

2. A fruit seller sold big , medium and small size orange for 20,15 & 5 respectively. The total number of oranges sold in the ratio of 3 : 2 : 5 find the average cost of orange ?
   (a) 17 (b) 16.5
   (c) 11.5 (d) 13.5

3. The average of 15 students in a class by 1.5 kg when one of the students weighing 40 kg is replaced by a new student. What is the weight (in kg) of the new students ?
   (a) 61 (b) 62.5
   (c) 63.5 (d) 64

4. The average age of 8 men is increased by 2 years when two of them whose age are 23 & 25 years replaced by two new men. The average age of the two new men is
   (a) 23 (b) 24
   (c) 25 (d) 32

5. The average of 10 members is calculated as 15, it is discovered later on that while calculating the average one number namely 46, was wrongly read as 26. The correct age is :
   (a) 15 (b) 14
   (c) 17 (d) 19

6. The mean of 40 number is 30.Later it was discovered that two enters were wrongly entered as 85 and 13. Find correct mean :
   (a) 27 (b) 28.87
   (c) 78.45 (d) 23.45

7. On mixing two classes A and B of students having average marks 50 and 60 respectively, the over all average obtained is 52. Find the ratio of the students in the class A and B.
   (a) 2 :1 (b) 4 : 1
   (b) 3 : 7 (b) 5 : 6

8. The average per head, of all the workers of an institution is Rs. 60. The average salary of 12 officers is Rs. 400, the average salary, per head , of the Rest is Rs. 96. The total number of workers in the institution is
   (a) 1028 (b) 1030
   (c) 1032 (d) 1034

9. The average age of 40 students is 10 years. If the teacher's age added in total it becomes 11 years, The age of the teachers (in years) is :
   (a) 400 (b) 440
   (b) 50 (d) 51

10. The average score of the class of boys and girl in an examination is A. The ratio of boys and girls in the class 3 : 1. If the average score of boys is A+1, the average of girl is.
    (a) A (b) A+1
    (c) A – 3 (d) A+4

11. In a family , the average age of a father and mother is 51 years. The average of the father , mother and their only son is 39 years. What is the age of the son.
    (a) 2 (b) 14
    (c) 15 (d) 8

12. A man had 8 children. When their average age was 10 years, a child aged 5 died. Then average age of remaining 7 children ?
    (a) 7.5 (b) 10.14
    (c) 15.12 (d) 9.25

13. The average age of 30 students of a class is 14 years 4 month. After admission of 5 new students in the class the average becomes 13 years 9 month. The youngest one of the five new students is 9 years 11 month old. The average of the remaining 4 new students are :
    (a) 10 years
    (b) 10 years 3 month
    (c) 10 years 4 month
    (d) 10 years 5 monht

14. Average age of mother, father and son was 45 at the time of son's marriage. After one year, an infant was born and after 6 years of marriage the average age of family becomes 39. Find the age of bride at the time of marriage ?
(a) 21 (b) 22
(c) 23 (d) 25

15. The average of five members is 9 when three new number are included the average of the eight number becomes 11.5. The average of the three new number is
(a) 14.33 (b) 14.67
(c) 15.67 (d) 14.67

16. The average of six number is 25. I one number is removed, the average becomes 20. What is the new total ?
(a) 10 (b) 20
(c) 50 (d) 40

17. If the average age of three batches of 55,60 and 45 students respectively is 50,55 and 60 , then the average marks of all student is:
(a) 55.86 (b) 54.68
(b) 55.81 (d) 54.93

18. If the average of 15 number is 10. If the average of the first 8 number is 8 and last 8 number average is is12. What is the middle number
(a) 0 (b) 10
(c) 15 (d) 20

19. Sachin Tendulkar has certain average for 11 innings. In the 12^{th} innings he scores 120 runs and thereby increase his average by 5 runs. His new average is
(a) 60 (b) 12
(c) 132 (d) 132

20. The sum of eight consecutive even numbers of set-A is 376. What is the sum of different set of five consecutive numbers whose lowest number is 15 more than the mean of set-A ?
(a)296
(b)320
(c)324
(d)284

Answer key

1	b	11	c
2	c	12	b
3	b	13	c
4	d	14	b
5	c	15	d
6	b	16	c
7	b	17	b
8	c	18	b
9	d	19	a
10	c	20	b

Solutions :

(1)

Class x

Section A = Boys : 35

Girls : 40

Section B = Boys : 60

Girls : 45

Total marks

A = 35 X 40 = 1400

B = 45 X 60 = 2700

4100

Total boys (both section) = 60+35 = 95

Average of both class = $\frac{4100}{95}$

= 43.15

(2)

	Big	Medium	Small
Price	20	15	5
Quantity	3	2	5
	60	30	25

Total = 60 + 30 +25

= 115

Average cost = 115/ 10 = 11.5

(3)

Increase in weight of every student = 1.5 kg

Total Increase = 15 X 1.5 = 22.5 kg

Weight of replaced student = 40 kg

New student weight = 40 +22.5

= 62.5 kg

(4)

$$\frac{Sum\ of\ ages\ of\ new\ men\ -\ sum\ of\ ages\ of\ old\ men}{8} = 2$$

$$\frac{Sum\ of\ ages\ of\ new\ men\ -\ (23+25)}{8} = 2$$

$$\frac{Sum\ of\ ages\ of\ new\ men - 48}{8} = 2$$

Sum of new men – 48 = 2X 8

Sum of new men – 48 = 16

Sum of new men = 16+48

Sum of new men = 64

New men = 2

Average of new men is = 64/2

= 32

(5)

Total age = 15 X 10

= 150

Correct age total = 150 +(Right number – wrong number taken)

= 150 + (46-26)

= 150+20

= 170

Correct Average = 170/10 = 17

(6)

Solutions :

Total of number = 40 X 30

= 1200

Correct total = 1200 + (Right number – wrongly number)

= 1200 + [(58+13) – (85+31)]

= 1200 + (71 – 116)

= 1200 +(-45)

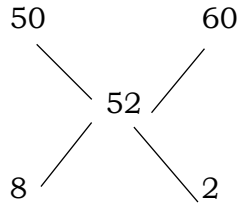
= 1200 – 46

= 1155

Correct average = 1155/ 40 = 28.87

(7)

By applying allegation formula



Ration = 4 : 1

(8)

Suppose total officer is = x

Average salary = 60

Total salary of 12 officers = 400 X 12

= 4800

Now the equation is

60x = 4800 + 56(x-12)

60x= 4800 + 56x -672
4x = 4128
x = 4128 / 4
x = 1032

(9)

40 X 10 = 11 X 41 + x
400 = 451 + x
X = 51

(10)

If girl's average score = x
As per question ,
3(A+1) +1(x) =(3+1)A
3A+3+x = 4A
3+x = 4A-3A
x = A - 3

(11)

$\frac{F+M}{2}$ =51 years
F+M = 102 years
$\frac{F+M+S}{3}=39$
F+M+S = 39 X 3
F+M+S = 117
The age of son = (F+M+S) – (F+M)
= 117 – 102
= 15 years

(12)

Total child = 8
Total At the time of death = 10 X 8 = 80
After the death = 80 – 5 = 75
Average age of 7 after the death = 75 /7
= 10.14

(13)_

As per question,
Total age of 30 students
= 30 X (14 years 4 months)
= 30 X $14\frac{4}{12}$
= 30 X $14\frac{1}{3}$
= 30 X $\frac{43}{3}$
= 10 X 43
= 430
Total age of (30+5) students
= 35 X (13 years 9 month)
= 35 X $13\frac{9}{12}$
= 35 X $13\frac{3}{4}$
= $\frac{35\times39}{4}$
= $\frac{1925}{4}$
Total age of 5 students = $\frac{1925}{4}$ - 430
= $\frac{205}{4}$
= 51 years 3 months.
One of the new five students (youngest one age) = 9 years 11 month old

Remaining 4 students age = 51 years 3 month – 9 years 11 month
= 41 years 4 months

Average age = $\frac{41 years 4 month}{4}$
= 10 years 4 months.
(14)

Sum of age M +F+S = 45 X 3 = 135 years
(At the time of merraige)
At the time age after 6 years = M + F+S+B+C
= 39 X 5
= 195 years
Sum of age (M+F+S)
After 6 years = 135 +18(6X3)
= 153 years
Sum of age (B+c) (after 6 years)
= Total – (M+F+S)
= 180 – 153
= 27
B+C = 27 years
B+5 = 27

B = 22 years

(15)

Total of The 5 numbers = 9 X 5

= 45

3 no are included

New 8 number = 8 X 11.5

= 92

Total of 3 no = 92 – 45 = 47

Average = 47/ 3

= 15.67

(16)

Total 6 number = 25 X 6 = 150

New total after removed , new total

Total after removed = 20 X 5 = 100

So, new total = 150 -100

= 50

(17)

Total marks of three batches =

55 X 50 + 60 X 55 +45X 60

= 2750 + 3300 + 2700

= 8750

Average = $\frac{8750}{55+45+60}$

= $\frac{8750}{160}$

= 875/16

= 54.68

(18)

Total number = 15 X 10 = 150

Total of first 8 number = 8 X 8

= 64

Total of last 8 number = 8 X 12

= 96

Middle number = (96+64)-150

= 160 – 150

= 10

(19)

Average of 11 innings = x

Total runs Sachin made = 11x

As per question ,

x + 5 = $\frac{11x+120}{12}$

12x+ 60 = 11x+120

12x – 11 x = 120 -60

X = 60

(20)

Mean of set A = $\frac{376}{8}$

= 47

The lowest number off second set

= 47 + 15 = 62

Required sum = 62 + 63 + 64 + 65 + 66

= 320