

Averages

Averages

Average is mainly defined as the sum of observations divided by the number of observations. Keeping in view the Quantitative Aptitude section of any competitive exam, 1-2 questions are asked from this chapter. It is not a difficult chapter if you know the tricks to solve the question in very less time.

Formula:

- Average = (Sum of observations) / (Number of observations)

Average Speed:

- If a person travels some distance at a speed of x km/hr and the same distance at a speed of y km/hr, then the average speed during the whole journey will be calculated by using the formula $2xy/(x+y)$

If a person covers P km at x km/hr and Q km at y km/hr and R km at z km/hr, then the average speed in covering the whole distance is $(P+Q+R)/(P/x+Q/y+R/z)$

Important Points:

- When a person replaces another person then:
Age of new person = Age of person who left + (Increase in average * total number of persons)
- If the average is increased, then
Age of new person = Age of person who left - (Decrease in average * total number of persons)
- If the average is decreased, then
Age of new person = Age of person who left - (Decrease in average * total number of persons)
- When a person joins the group:
In case of an increase in average,
Age of new member = Previous average + (Increase in average * Number of members including new member)
- In case of decrease in average,
Age of new member = Previous average - (Decrease in average * Number of members including new member)
- In the Arithmetic Progression there are two cases:
When the number of terms is odd - the average will be the middle term.
When number of terms is even - the average will be the average of two middle terms.

$$\text{Avg} = \frac{\text{sum of values}}{\text{No. of values}}$$

$$\Rightarrow \text{sum of values} = \text{Avg} \times \text{No. of values}$$

→ **change in Average :-**

If a new value is added, then

$$\Rightarrow \text{change in Avg} = \frac{\text{New value} - \text{Prev. Avg}}{\text{No. of values}}$$

If an existing value is replaced, then

$$\Rightarrow \text{change in Avg} = \frac{\text{New value} - \text{old value}}{\text{No. of values}}$$

<u>3 values + new</u>	<u>Sum</u>
i) $\{46, 50, 54\}$ diff = <u>50</u>	$150 + 50 = 200$
ii) $20, 30, 100, 46$ diff = $\frac{-4}{4} = -1$	$150 + 46 = 196$
iii) $47, 49, 54, 58$ diff = $\frac{8}{4} = 2$	$150 + 58 = 208$
iv) $50, 50, 50, 48$	$150 + 48 = 198$
	diff = $\frac{-2}{4} = -0.5$

<u>Avg</u>	<u>New Avg</u>
<u>50</u>	50 No change
<u>50 - 1</u>	49
<u>50 + 2</u>	52
<u>50 - 0.5</u>	49.5

→ **Combined Average :-**

If 'n' values are divided into 2-groups with n_1 & n_2 values having A_1 & A_2 as their average, then the combined average is equal to A

$$\Rightarrow A = \frac{n_1 A_1 + n_2 A_2 + \dots}{n_1 + n_2 + \dots}$$

, where,

$n_1 A_1$ → sum 1

$n_2 A_2$ → sum 2

⋮

* This formula can be extended to any number of groups.
 Eg $A = \frac{n_1 A_1 + n_2 A_2 + n_3 A_3 + \dots}{n_1 + n_2 + n_3 + \dots}$

If $n_1 = n_2$, then

$$\Rightarrow A = \frac{A_1 + A_2}{2}$$

→ Average of consecutive values :-

(1)- consecutive numbers] difference = 1
 Eg :- 12, 13, 14, 15, 16

(2)- consecutive even numbers] difference = 2
 Eg :- 12, 14, 16, 18, 20

(3)- consecutive odd numbers] difference = 2
 Eg :- 11, 13, 15, 17, 19

(4)- consecutive multiples of a number
 Eg :- 12, 15, 18, 21, 24 difference = 3
 Eg :- 20, 25, 30, 35 difference = 5

$$\text{Avg} = \frac{\text{first value} + \text{last value}}{2}$$

► If 'n' is odd,
 then avg is $\left(\frac{n+1}{2}\right)^{\text{th}}$ value

► If 'n' is even,
 then avg is $\frac{\left(\frac{n}{2}\right)^{\text{th}} \text{ value} + \text{next value}}{2}$

$\left\{ n = \text{no. of values} \right.$

$$\text{Avg} = \frac{\text{first value} + \text{last value}}{2}$$

→ If 'n' is odd,
 then avg is $\left(\frac{n+1}{2}\right)^{\text{th}}$ value

→ If 'n' is even,
 then avg is $\frac{\left(\frac{n}{2}\right)^{\text{th}} \text{ value} + \text{next value}}{2}$

Note :- Here n is "No. of values".

Questions

1. Find the average of numbers 87, 84, 86, 90, 82, 88, 78.

A. 85

B. 84

C. 83

D. 82

$$\text{Sum} = 87 + 84 + 86 + 90 + 82 + 88 + 78 = 595$$

$$\text{No. of terms} = 7$$

$$\text{Avg} = \frac{\text{Sum of terms}}{\text{No. of terms}}$$

$$\text{Avg} = \frac{595}{7} = 85,$$

2. The average of 4 terms is 20 and the 1st term is $\frac{1}{3}$ of the ^{Sum} remaining terms . What will be the first number?

A. 30

B. 20

C. 60

D. 80

$$\begin{aligned} a + b + c + d &= 20 \times 4 \\ \Rightarrow a + 3a &= 80 \\ 4a &= 80 \\ a &= \frac{80}{4} \\ a &= 20, \end{aligned}$$

$$\left\{ \begin{array}{l} a = \frac{1}{3}(b+c+d) \\ \text{OR} \\ b+c+d = 3a \end{array} \right.$$

3. The average age of A, B and C was 25 years and that of B and C was 25 years. A's present age is:

A. 30 years

B. 25 years

C. 40 years

D. 42 years

$$\frac{A+B+C}{3} = 25 \quad | \quad \frac{B+C}{2} = 25$$

$\{ \text{no change} \}$

$$\therefore \text{Age of A} = 25 -$$

4. The average of 7 consecutive numbers is n. If the next two numbers are included, the average will

- A. increased by 2 B. remains the same C. increased by 1 D. decreased by 2

5. For 9 innings, Boman has an average of 75 runs. In the tenth inning, he scores 100 runs, thus increasing his average . His new average is

- A. Rs.75 B. Rs.100 C. Rs.72 D. Rs.77.5

$$\text{change in Avg} = \frac{\text{New value} - \text{Prev. Avg}}{\text{No. of values}}$$

$$x = \frac{100 - 75}{10} = \frac{25}{10} = 2.5$$

$$\Rightarrow \text{New Average} = 75 + 2.5 = 77.5 \quad \checkmark$$

Prev. Avg = 75
 New Val = 100
 No. of values = 9 + 1 = 10

6. For 9 innings, Roman has an average of 65 runs. In the tenth inning, he scores 200 runs, thus increasing his average . His average increased by

- A. 78.5 B. 72 C. 13.5 D. 77.5

$$x = \frac{200 - 65}{10} = \frac{135}{10} = 13.5 \quad \checkmark$$

7. In a family of 8, the men eat on average 72kg of food and women eat on an average 50kg of food. The men and women are equal in number. A hungry woman named Neetu joined the family for dinner and the average consumption became 67. How much did Neetu eat (in kgs)?

- A. Rs.115 B. Rs.80 C. Rs.90 D. Rs.85

$$\text{change in Avg} = \frac{\text{New value} - \text{Prev. Avg}}{\text{No. of values}}$$

$$6 = \frac{x - 61}{9}$$

$$54 = x - 61$$

$$x = 61 + 54$$

$$x = 115 \quad \checkmark$$

$$A = \frac{A_1 + A_2}{2}$$

$$A = \frac{72 + 50}{2} = \frac{122}{2}$$

$$A = 61$$

$$\text{old Avg} = 61$$

$$\text{New Avg} = 67$$

$$\text{change in Avg} = 67 - 61 = 6$$

find Shortcut =

8. In a hotel, the tariff for every odd dates is Rs.1000 and for even dates is Rs. 2000. If the man paid total of 30000 in all. For how many days did he stay in the hotel given that the first day is 5th date of the month?

A. 50

B. 20

C. 40

D. 60

$$\begin{array}{r}
 5 - 1000 \\
 6 - 2000 \\
 2 - 3000 \\
 \hline
 \end{array}
 \quad \text{Total} = 30000$$

X 10 = 30000
 (20)

9. The average of 5 terms is 50. If the first 4 terms are 45, 42, 119, and 84, what will be the last term?

A. 56

B. -20

C. -40

D. -50

$$\begin{aligned}
 50 &= \frac{45 + 42 + 119 + 84 + u}{5} = \frac{290 + u}{5} \\
 \Rightarrow 250 &= 290 + u \\
 \therefore u &= -40
 \end{aligned}$$

10. If the average number of 8 terms is given to be 40 and the average of first 6 terms is given to be 35. What is the average of the remaining 2 terms?

A. 30

B. 55

C. 40

D. 42

$$A = \frac{n_1 A_1 + n_2 A_2 + \dots}{n_1 + n_2 + \dots}$$

Total Term	= 8	6	2
Total Avg	= 40	35	<u>u</u>

$$40 = \frac{6 \times 35 + 2 \times u}{8}$$

$$320 = 210 + 2u$$

$$2u = 110$$

$$u = 55$$

11. The average marks of 13 papers is 40. The average marks of the first 7 papers are 42 and that of the last seven papers is 35. Find the marks obtained in the 7th paper.

A. 23

B. 38

C. 19

D. 57

Sum of 13 terms	= 520	Terms	= 13	7	7
Sum of first 7 terms	= $7 \times 42 = 294$	Avg	= 40	42	35
Sum of last 7 terms	= $7 \times 35 = 245$	Sum	= 520	294	245
Sum of all 14 terms	= $294 + 245 = 539$				

$\boxed{\text{7th term}} = 539 - 520 = 19$

V
539

12. Mukul has earned an average of 4,200 dollars for the first eleven months of the year. If he justifies his staying in the US on the basis of his ability to earn at least 5000 dollars per month for the entire year, then how much should he earn (in dollars) in the last month to achieve his required average for the whole year?

A. 14600

B. 13800

C. 12,800

D. 11800

$$\text{Sum for 12 months} = 60000$$

$$\text{Sum for 11 months} = 46200$$

$$\begin{aligned}\text{Earning in last month} &= 60000 - 46200 \\ &= 13800,\end{aligned}$$

$$\left\{ \begin{array}{l} \text{Terms} = 12 \quad | \quad 11 \\ \text{Avg} = 5000 \quad | \quad 4200 \\ \hline \text{Sum} = 60000 \quad | \quad 46200 \end{array} \right.$$

13. The average of x, y and z is 45. x is as much more than the average as y is less than the average. Find the value of z.

A. 45 years

B. 35 years

C. 60 years

D. 15 years

$$\begin{aligned}x + y + z &= 45 \times 3 \\ (45+x) + (45-x) + z &= 135 \\ 45+u+45-x+2 &= 135 \\ z &= 135 - 90 \\ z &= 45,\end{aligned}$$

$$\left\{ \begin{array}{l} x = 45+u \\ y = 45-u \end{array} \right.$$

14. The average for some number of terms (say 'n') is zero. How many maximum numbers of terms can be negative?

A. 0

B. n

C. n+1

D. n-1

15. The average salary of 30 officers in a firm is Rs.120 and the average salary of laborers is Rs. 40. Find the total number of laborers if the average salary of the firm is Rs.50.

A. Rs.180

B. Rs.420

C. Rs.240

D. Rs.210

$$\begin{aligned}50u &= 3600 + 40x - 1200 \\ 10u &= 2400 \\ u &= 240 \text{ (Total Employees)} \\ \text{No. of laborers} &= u-30 \\ &= 240-30 \\ &= 210,\end{aligned}$$

$$\left\{ \begin{array}{l} \text{No} = u \quad | \quad 30 \quad | \quad (u-30) \\ \text{Avg} = 50 \quad | \quad 120 \quad | \quad 40 \\ \hline \text{Sum} = 50u \quad | \quad 3600 \quad | \quad 40(u-30) \end{array} \right.$$

16. In a class, the average marks of 40 students was calculated to be 52.15. It was later discovered that the marks of a student were taken to be 49, instead of 85. Find the real average of the class.

A. 53.05

B. 53.15

C. 52.85

D. 52.95

$$\text{Change in Avg} = \frac{\text{New value} - \text{Old value}}{\text{No. of values}}$$

$$\left\{ \begin{array}{l} \text{New value} = 85 \\ \text{Old value} = 49 \end{array} \right.$$

$$\text{Change in Avg} = \frac{85 - 49}{40} = \frac{36}{40} = 0.9$$

$$\text{Real avg} = 52.15 + 0.9 = 53.05$$

17. For 9 innings, Aman has a certain run rate. In the tenth inning, he scores 100 runs, thereby increasing his run rate by 8 runs. What is his new run rate?

A. Rs.22

B. Rs.26

C. Rs.28

D. Rs.32

$$10x + 80 = 9x + 100$$

$$x = 20$$

$$\begin{aligned}\text{New run rate} &= 20 + 8 \\ &= 28\end{aligned}$$

$$\left\{ \begin{array}{l} \text{No.} = 9 \\ \text{Avg} = x \\ \hline \text{Sum} = 9x \end{array} \right| \begin{array}{l} 10 \\ (x+8) \\ \hline 10(x+8) \end{array}$$

18. The average of 5 consecutive numbers is n. What will be the average if the next two numbers are included?

A. n+2

B. n-1

C. n-2

D. n+1

19. In 40 overs game, in first 20 overs of a game of cricket, the run rate was only 5. What should be the run rate for the remaining overs so that the total score reaches 300?

A. 15

B. 10

C. 28

D. 20

$$20x = 200$$

$$x = \frac{200}{20}$$

$$x = 10$$

$$\left\{ \begin{array}{l} \text{No.} = 40 \\ \text{Avg} = \quad \quad | \quad 20 \quad | \quad 20 \\ \hline \text{Sum} = 300 \quad | \quad 100 \quad | \quad 200 \end{array} \right.$$

20. The average weight of 39 men travelling to Ladakh is 30. If an obese man with weight 130 kg join them. What will be the average weight of the people travelling to Ladakh?

A. 52

B. 30

C. 32.5

D. 130

$$\text{Total sum of } 40 = 1170 + 130$$

$$= 1300$$

$$40x = 1300$$

$$x = \frac{1300}{40} = 32.5$$

$$\left\{ \begin{array}{l} \text{No.} = 40 \quad | \quad 39 \\ \text{Avg} = \quad \quad | \quad 30 \\ \hline \text{Sum} = \quad \quad | \quad 1170 \end{array} \right.$$

OR

$$\text{Change} = \frac{130 - 30}{40} = \frac{100}{40} = 2.5$$

$$\begin{aligned}\text{New Avg} &= \text{Old Avg} + \text{change} \\ &= 30 + 2.5 \\ &= 32.5\end{aligned}$$

21. Rakshit sold 21 tables in a day. He told his father, "My earnings at end of the day are Rs 400000/- . The average earning from the first 11 tables I sold was Rs 20000/-". What were his average earnings from the remaining tables?

- a. Rs. 9125 b. Rs. 9750 c. Rs. 16,363 ✓d. Rs. 18,000

$$10x = 180000 \\ x = 18000$$

$$\left\{ \begin{array}{c} \text{No} = 21 & | & 11 & | & 10 \\ \text{Avg} = & & 20000 & & \\ \hline \text{Sum} = 400000 & | & 220000 & | & 180000 \end{array} \right.$$

22. If I do not consider the earnings from selling the six seater dining table, my average falls by Rs 2000/- . What is the cost of six seater dining table if average earnings from selling 11 four seater dining tables and one six seater dining table is Rs 18000?

- a. Rs. 29000 b. Rs. 30000 c. Rs. 36000 ✓d. Rs. 40000

$$n = 12 \quad [11 \rightarrow 4\text{-seater} \quad | \quad 1 \rightarrow 6\text{-seater}]$$

$$\text{Avg} = 18000 - 2000 \\ = 16000$$

$$\begin{aligned} \text{cost of } 12\text{-Tables} &= 18000 \times 12 \\ \text{cost of } 11\text{-Tables} &= 16000 \times 11 \\ &= \underline{\underline{4000}} \end{aligned}$$

23. The cargo ship was carrying gas cylinders from Australia to New Zealand. 3 cylinders with average weight X Kg belonged to a single owner. Last minute one of the cylinders weighing 85 kg was replaced by another cylinder leading to a rise in average weight of the 3 cylinders by 7 kg. Find the weight of the new cylinder.

- a. 79 kg b. 92 kg ✓c. 106 kg d. 109 kg

$$\begin{aligned} \text{change in Avg} &= \frac{\text{New value} - \text{old value}}{\text{No. of values}} \\ 7 &= \frac{x - 85}{3} \\ 21 &= x - 85 \\ x &= 85 + 21 = 106 \end{aligned}$$

$$\left\{ \begin{array}{l} \text{change in Avg} = 7 \\ \text{New value} = x \\ \text{old value} = 85 \\ \text{No} = 3 \end{array} \right.$$

24. In an exam, the average marks for 80 students of Class V is 35. The average of marks in section A of the class is 55 while the average of marks in section B is 30. Find the number of students in Class V B.

- a. 45 b. 50 ✓c. 64 d. 70

$$\begin{aligned}
 2800 &= 55x + 30(80-x) \\
 2800 &= 55x + 2400 - 30x \\
 400 &= 25x \\
 x &= \frac{400}{25} = 16 - A
 \end{aligned}$$

$$\begin{aligned}
 \text{class V B} &= 80 - x \\
 &= 80 - 16 = 64
 \end{aligned}$$

$$\left\{
 \begin{array}{rcl}
 \text{No} &= 80 & x \\
 \text{Avg} &= 35 & 55 \\
 \hline
 \text{sum} &= 2800 & 55x & 30(80-x)
 \end{array}
 \right.$$

25. Average of 3rd and 5th number in 5 consecutive numbers is 12. Find the sum of 5 numbers.

- a. 10.25 b. 22.5 c. 50 ✓d. 55

$$\frac{x+(x+1)+(x+2)+(x+3)+(x+4)}{5} = ?$$

$$\begin{aligned}
 \text{sum} &= 9 + 10 + 11 + 12 + 13 \\
 &= 55
 \end{aligned}$$

$$\left\{
 \begin{array}{l}
 \text{But}, \\
 \frac{(x+2)+(x+4)}{2} = 12 \\
 2x + 6 = 24 \\
 x = 9
 \end{array}
 \right.$$

26. Rajat carried two types of pens with him. The ratio of cost of Pen A : Pen B was 10:4.

There were two pens of type B with him and the average cost of all the three pens together was Rs 60/- . Find the cost of Pen A.

- a. Rs.72/- b. Rs.75/- ✓c. Rs.100/- d. Rs.150/-

$$\begin{aligned}
 A:B &= 10:4 \\
 10x + 4x + 4x &= 180 \\
 18x &= 180 \\
 x &= 10 \\
 \text{cost of Pen A} &= 10x \\
 &= 10 \times 10 = 100
 \end{aligned}$$

$$\left\{
 \begin{array}{rcl}
 \text{No} &= 3 \\
 \text{Avg} &= 60 \\
 \hline
 \text{sum} &= 180
 \end{array}
 \right.$$

27. There are some history books and some geography books in a library. The books that were read were read cover to cover. The average number of pages read for all these books is 158. If the average number of pages read for history books is 164 and that for geography books is 154, find the ratio of no. of history books to that of geography books.

- ✓a. 2:3 b. 3:2 c. 3:5 d. 5:3

$$\begin{aligned}
 A &= \frac{n_1 A_1 + n_2 A_2}{n_1 + n_2} \\
 158 &= \frac{n_1(164) + n_2(154)}{n_1 + n_2} \\
 158n_2 - 154n_2 &= 164n_1 - 158n_1 \\
 4n_2 &= 6n_1 \\
 \frac{n_1}{n_2} &= \frac{2}{3} \quad \text{OR} \quad 2:3
 \end{aligned}$$

$$\left\{
 \begin{array}{rcl}
 \text{No} &= H & G \\
 \text{Avg} &= 158 & 164 & 154 \\
 \hline
 \text{sum} &= & &
 \end{array}
 \right.$$

28. Rishabh's current average of runs is 64. He wanted it to be 66 and this could have been achieved if he had scored 22 runs more in all his innings put together. How many innings has he played till now?

- a. 10 ✓b. 11

- c. 12

- d. 15

$$\begin{aligned} 66x + 22 &= 64x \\ 2x &= 22 \\ x &= 11 \end{aligned}$$

$$\left\{ \begin{array}{l|l} \text{No} = x & x \\ \text{Avg} = 64 & 66 \\ \hline \text{Sum} = 64x & (64x + 22) \end{array} \right.$$

29. In a big joint family of 42 people, the difference between the ages of Great Grandfather and Great Grandson is 100 years. Leaving these two members out, the average age of remaining members is 28 years. The average age of the family otherwise is 30 years. Find the age of the Great Grandfather.

- a. 101 years

- b. 103 years

- c. 115 years

- ✓d. 120 years

$$\begin{aligned} 1260 &= 1120 + x + (x+100) \\ 1260 &= 1120 + 2x + 100 \\ 1260 &= 1220 + 2x \\ 40 &= 2x \\ x &= \frac{40}{2} = 20 \end{aligned}$$

$$\left\{ \begin{array}{l|l} \text{No} = 42 & 40 \\ \text{Avg} = 30 & 28 \\ \hline \text{Sum} = 1260 & 1120 \end{array} \right.$$

$$\text{Age of Great grandfather} = x + 100 = 20 + 100 = 120$$

30. In a group there are 80 women. The average age of a group of 20 women is 22 years while that of other group of 20 women is 24 years. Find the average age of remaining women if the average age of the complete group together is 20 years.

- ✓a. 17 years

- b. 21 years

- c. 25 years

- d. 27 years

$$\begin{aligned} 1600 &= 440 + 480 + 40x \\ 1600 &= 920 + 40x \\ 40x &= 680 \\ x &= \frac{680}{4} = 17 \end{aligned}$$

$$\left\{ \begin{array}{l|l|l|l} \text{No} = 80 & 20 & 20 & 40 \\ \text{Avg} = 20 & 22 & 24 & x \\ \hline \text{Sum} = 1600 & 440 & 480 & 40x \end{array} \right.$$

31. There are 47 boys in a picnic group. The average age of the group is 12 years. However, if the teacher is included in the group, the average age of the group increases by 6 months. Find the age of the teacher.

- a. 35.5 years

- ✓b. 36 years

- c. 36.5 years

- d. 37 years

$$\begin{aligned} \text{Age of Teacher} &= 600 - 564 \\ &= 36 \end{aligned}$$

$$\left\{ \begin{array}{l|l} \text{No} = 47 & 48 \\ \text{Avg} = 12 & 12.5 \\ \hline \text{Sum} = 564 & 600 \end{array} \right.$$

X 32. A group of girls decided to go to a nearby food joint and eat some snacks. They were prepared to spend Rs 96 on these snacks. However, some girls could not join because of an extra class and the remaining girls had to spend Rs 4 each extra. Find the number of girls who actually went to the food joint.

a. 6

b. 8

c. 12

d. 16

Incorrect Question =

$$\left\{ \begin{array}{l} \text{No.} = u \\ \text{Avg.} = \underline{\hspace{2cm}} \\ \text{Sum} = 96 \end{array} \right.$$

33. Consider the following information:

i. Four consecutive even numbers' average = 93.

ii. Sum of 7 consecutive odd numbers = 539.

What is the sum of 3rd largest odd number and smallest even number?

a. 169

b. 627

c. 629

d. 631

$$\frac{u + (u+2) + (u+4) + (u+6)}{4} = 93 \quad \text{--- (1)}$$

$$(u+1) + (u+3) + (u+5) + (u+7) + (u+9) + (u+11) + (u+13) = 539 \quad \text{--- (2)}.$$

Eg - (1)

$$4u + 12 = 372$$

$$4u = 360$$

$$u = \frac{360}{4}$$

$$u = 90$$

$$\text{smallest even no.} = u \\ = 90$$

Eg - (2)

$$7u + 49 = 539$$

$$7u = 490$$

$$u = \frac{490}{7}$$

$$\begin{aligned} u &= 70 \\ \text{3rd largest odd No.} &= u+9 \\ &= 79 \end{aligned}$$

$$\begin{aligned} \text{final sum} &= 90 + 79 \\ &= 169, \end{aligned}$$

34. A new public garden was inaugurated in the vicinity at the end of April 2017. Rohit wanted to find the average number of visitors per day in May 2017 which started on Monday. The stats he collected are as follows:

i. Average number of visitors on Monday, Wednesday and Friday : 225

ii. Average number of visitors on Tuesday, Thursday and Saturday : 311

iii. Average number of visitors on Sunday : 520

What output would Rohit get from this data?

a. 288

b. 299

c. 315

d. 382

$$\begin{aligned} 7u &= 675 + 933 + 520 \\ 7u &= 2128 \quad \text{or} \quad 2128 / \text{week} \end{aligned}$$

No. = 7	MWF = 3	TTS = 3	S = 1
Avg. = $\underline{\hspace{2cm}}$	225	311	520

$$\text{Total} = 2128 \times 4 + 225 + 311 + 225 = 9273$$

$$\text{Avg} = \frac{9273}{31} = 299$$

$$\text{Sum} = 7u | 675 | 933 | 520$$

35. The average runs scored by a cricketer in 10 innings are X . He plays his next innings and scores 108 runs. This increases the average by 6 runs. What is his new average?

- a. 48 runs b. 52 runs c. 55 runs

- d. 60 runs

$$11(u+6) = 10u + 108$$

$$11u + 66 = 10u + 108$$

$$u = 108 - 66$$

$$u = 42$$

$$\text{New average} = 42 + 6 = 48$$

$$\left\{ \begin{array}{l} \text{No.} = 10 | 11 \\ \text{Avg.} = X | u+6 \\ \hline \text{Sum} = 10X | 10u + 108 \end{array} \right.$$