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Average Quiz 8

Directions: Kindly study the following Questions carefully and choose the right answer:

1. The average of 15 numbers is 7. If the average of the first 8 numbers be 6.5 and the average of last 8 numbers be 9.5, then the middle number is

- A. 20 B. 21 C. 23 D. 18

2. If a, b, c, d, e are five consecutive odd numbers, their average is

- A. $5(a + 4)$ B. $\frac{abcde}{5}$ C. $5(a + b + c + d + e)$ D. $a + 4$

3. The average mathematics marks of two sections A and B of class IX in the annual examination is 74. The average marks of Section A is 77.5 and that of section B is 70. The ratio of the number of students of section A and B is

- A. 7 : 8 B. 7 : 5 C. 8 : 7 D. 8 : 5

4. In a certain year, the average monthly income of a person was Rs. 3400. For the first eight months of the year, his average monthly income was Rs. 3160 and for the last five months, it was Rs. 4,120. His income in the eighth month of the year was:

- A. Rs. 3,160 B. Rs. 5,080 C. Rs. 15,520 D. Rs. 5,520

5. Out of three numbers, the first is twice the second and is half of the third. If the average of the three numbers is 56, then difference of the first and third number is

- A. 12 B. 36 C. 24 D. 48

6. The average of nine numbers is 50. The average of the first five numbers is 54 and that of the last three numbers is 52. Then the sixth number is

- A. 30 B. 34 C. 24 D. 44

7. The average score of Rajeev, Mahendra and Suresh is 63. Rajeev's score is 15 less than that of Sunny and 10 more than that of Mahendra. If Sunny scored 30 marks more than the average score of Rajeev, Mahendra and Suresh, what is the sum of Mahendra's and Suresh's score?

A. 120

B. 117

C. Can't be determined

D. 111

8. Abhishek Jain typed 50 pages at the rate of 30 pages per hour on Sunday. On Monday, he could only type 50 extra pages at the rate of 20 pages per hour. What has his average rate of typing been overall? Calculate in pages per hour?

A. 30

B. 24

C. 48

D. 35

9. The average weight of boys in a class is 25 kg and the average weight of girls in the same class is 15 kg. If the average weight of the whole class is 19 kg, what could be the possible strength of boys and girls respectively in the same class?

A. 8 and 12

B. 15 and 5

C. 14 and 6

D. 9 and 11

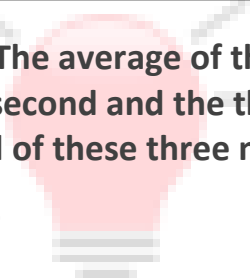
10. The average of the first and the second of three number is 15 more than the average of the second and the third of these numbers. What is the difference between the first and the third of these three numbers?

A. 15

B. 45

C. 60

D. None of these



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Correct Answers:

1	2	3	4	5	6	7	8	9	10
C	D	C	B	D	C	D	B	A	D

Explanations:

1. As per the given information, we get

Average of 15 numbers = 7. So, total of the numbers = $15 \times 7 = 105$

Average of first 8 numbers = 6.5. So, total of the numbers = $8 \times 6.5 = 52$

Average of last 8 numbers = 9.5. So, total of the numbers = $8 \times 9.5 = 76$

Hence, the 8th number = $(52 + 76) - 105 = 128 - 105 = 23$.

Hence, option C is correct.

2. Numbers:

a, b = (a + 2), c = (a + 4), d = (a + 6), e = (a + 8)

$$\therefore \text{Required avg} = \frac{a + a + 2 + a + 4 + a + 6 + a + 8}{5} = \frac{5a + 20}{5}$$

$$\Rightarrow \frac{5(a + 4)}{5} = a + 4.$$

Hence, option D is correct.

3. Let the number of students in section A is x and B is y, then

$$74 = \frac{77.5 \times x + 70 \times y}{x + y}$$

$$\Rightarrow 74x + 74y = 77.5x + 70y$$

$$\Rightarrow 4y = 3.5x \Rightarrow \frac{x}{y} = \frac{4}{3.5} = \frac{8}{7}$$

$$\Rightarrow 8 : 7.$$

Hence, option C is correct.

4. As per the given information, we get

Average of 12 months = 3400. So, total salary of all 12 months = $3400 \times 12 = \text{Rs. } 40800$ (eq. 1)

Average of first 8 months = 3160. So, total salary of first 8 months = $3160 \times 8 = \text{Rs. } 25280$ (eq. 2)

Average of last 5 months = 4120. So, total salary of first 5 months = $4120 \times 5 = \text{Rs. } 20,600$ (eq. 3)

Person's income in the eighth month = $(25280 + 20600) - 40800 = 45880 - 40800 = \text{Rs. } 5080$.

Note: In such questions, when we calculate total of two different sets (for instance, first 8 months + last 5 months), one particular value (8th month in this case) is calculated twice.

On subtracting the total of eq. 1 from the total of eq. 2 and 3 we are left with the value of the month that's been calculated twice in the question.

Hence, option B is correct.

5. Let the numbers are $2x$, x , $4x$, then,

Total of the numbers = $3 \times 56 = 168$

$$\Rightarrow 2x + x + 4x = 168$$

$$\Rightarrow 7x = 168 \Rightarrow x = 24$$

$$\therefore \text{Required difference} = 4x - 2x = (4 \times 24) - (2 \times 24)$$

$$\Rightarrow 96 - 48 = 48.$$

Hence, option D is correct.

6. As per the given information, we get

Average of 9 numbers = 50. So, total of the numbers = $9 \times 50 = 450$

Average of first 5 numbers = 54. So, total of the numbers = $5 \times 54 = 270$

Average of last 3 numbers = 52. So, total of the numbers = $3 \times 52 = 156$

Hence, the 6th number = $450 - (270 + 156) = 450 - 426 = 24$.

Hence, option C is correct.

7. According to the question, the average score of Rajeev, Mahendra and Suresh is 63.

$$\therefore \text{Sunny's score} = 63 + 30 = 93$$

Now,

$$\text{Rajeev's score} = 93 - 15 = 78$$

$$\text{Mahendra's score} = 78 - 10 = 68$$

$$\therefore \text{Suresh's score} = 63 \times 3 - (78 + 68) = 43$$

$$\therefore (\text{Mahendra} + \text{Suresh})\text{'s scores} = 68 + 43 = 111$$

Hence, option D is correct.

8. As per the question,

$$\text{No. of hours Abhishek typed on Sunday} = \frac{50}{30} = \frac{5}{3}$$

$$\text{No. of hours Abhishek typed on Monday} = \frac{50}{20} = \frac{5}{2}$$

$$\text{Total hours of typing} = \frac{5}{3} + \frac{5}{2} = \frac{25}{6}$$

$$\text{Total pages typed} = 50 + 50 = 100$$

$$\text{Average rate of typing} = \frac{100}{\frac{25}{6}} = 6 \times 4 = 24$$

Hence, Abhishek Jain typed 24 pages per hour.

Hence, option B is correct.

9.

By allegation method,

(Boys)	(Girls)
25	15
\ /	
19	
/ \	
4	6
8	12

Hence the possible strength of the class will be $(8 + 12) = 20$ In which there are possibly 8 boys and 12 girls in the class.

Hence, option A is correct.

10. Let the three numbers be x , y and z respectively.

$$\text{Then, } \left(\frac{x+y}{2}\right) - \left(\frac{y+z}{2}\right) = 15$$

$$\text{or, } \frac{x+y-y-z}{2} = 15$$

or, $x - z = 30$ Therefore, the difference between the first and the third number is 30.

Hence, option D is correct.

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