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## Average Questions for CLAT, CDS & SSC Exams.

### Average Quiz 9

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

**1. The average of five numbers is 56. If the average of first four numbers is 54, what is the value of the fifth number ?**

- A. 68                                      B. 72                                      C. 56                                      D. 64

**2. The average of six numbers is 20. If one number is removed, the average becomes 15. What is the number removed?**

- A. 5    B. 35                                      C. 112                                      D. 45

**3. Manish has a certain average for 11 innings. In the 12th innings he scores 120 runs and thereby increases his average by 5 runs. His new average is**

- A. 60                                      B. 62                                      C. 65                                      D. 66

**4. In a school with 600 students, the average age of the boys is 12 years and that of the girls is 11 years. If the average age of the school is 11 years and 9 months, then the number of girls in the school is**

- A. 450                                      B. 150                                      C. 250                                      D. 350

**5. A man purchases milk for three consecutive years. In the first year, he purchases milk at the rate of Rs. 7.50 per litre, in the second year, at the rate of Rs. 8.00 per litre and in the third year, at Rs. 8.50 per litre. If he purchases milk worth Rs. 4,080 each year, the average price of milk per litre for the three years is**

- A. Rs. 7.68                                      B. Rs. 7.98                                      C. Rs. 7.54                                      D. Rs. 7.83

**6. Out of nine persons, 8 persons spent ₹ 30 each for their meals. The ninth one spent ₹ 20 more than the average expenditure of all the nine. The total money spent by all of them was**

- A. Rs. 260                                      B. Rs. 290                                      C. Rs. 292.50                                      D. Rs. 400.50

7. 30 pens and 75 pencils altogether were purchased for Rs. 510. If the average price of a pencil was Rs. 2, what was the average price of a pen ?

A. Rs. 9

B. Rs. 10

C. Rs. 11

D. Rs. 12

8. The average of the three numbers  $x$ ,  $y$  and  $z$  is 45.  $x$  is greater than the average of  $y$  and  $z$  by 9. The average of  $y$  and  $z$  is greater than  $y$  by 2. Then the difference of  $x$  and  $z$  is

A. 3

B. 5

C. 7

D. 11

9. If the average of  $m$  numbers is  $n^2$  and that of  $n$  numbers is  $m^2$ , then average of  $(m + n)$  numbers is

A.  $\frac{m}{n}$

B.  $m + n$

C.  $mn$

D.  $m - n$

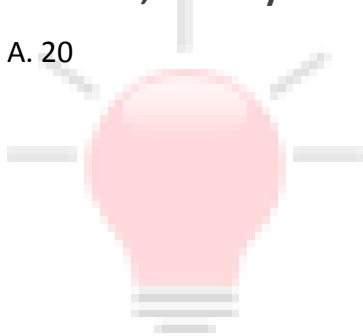
10. A cricketer has a certain average of runs for his 8 innings. In the ninth innings, he scores 100 runs, thereby increases his average by 9 runs. His new average of runs is

A. 20

B. 24

C. 28

D. 32



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**Correct Answers:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
D	D	C	B	B	C	D	C	C	C

**Explanations:**

1. The sum of five numbers =  $56 \times 5 = 280$

The sum of first four numbers =  $54 \times 4 = 216$

$\therefore$  Fifth number =  $280 - 216 = 64$

Hence, option D is correct.

2. Sum of six numbers =  $6 \times 20 = 120$

Given that if one number is removed, the average becomes 15.

$\therefore$  Sum of five numbers =  $5 \times 15 = 75$

Now, required number =  $120 - 75 = 45$ .

Hence, option D is correct.

3. To solve this question, we can apply short approach

**Average after n innings =  $x - y(n - 1)$**

Where,  $x = 120$ ;  $y = 5$ ;  $n = 12$

$\therefore$  Required average =  $120 - 5(12 - 1)$

=  $120 - 55 = 65$  runs

Hence, option C is correct.

4. Let, the number of girls =  $x$  & the number of boys =  $(600 - x)$

Given, the average age of the boys = 12 years

$\therefore$  Total age of the boys =  $12(600 - x)$  years

And, the average age of the girls = 11 years

$\therefore$  Total age of the girls =  $11x$  years

Now, average age of the school =  $\frac{\text{Total age of the boys} + \text{Total age of the girls}}{600}$

$$\Rightarrow 11\frac{3}{4} = \frac{12(600 - x) + 11x}{600}$$

$$\Rightarrow \frac{47}{4} = \frac{7200 - x}{600}$$

$$\Rightarrow 7200 - x = 7050$$

$$\Rightarrow x = 7200 - 7050 = 150$$

Hence, option B is correct.

5. Price of milk in first year = Rs. 7.50 per litre.

$$\therefore \text{Quantity of milk in first year} = \frac{4080}{7.50} = 544 \text{ litres}$$

Price of milk in second year = Rs. 8.00 per litre.

$$\therefore \text{Quantity of milk in second year} = \frac{4080}{8.00} = 510 \text{ litres}$$

Price of milk in third year = Rs. 8.50 per litre.

$$\therefore \text{Quantity of milk in third year} = \frac{4080}{8.50} = 480 \text{ litres}$$

$$\therefore \text{Required average} = \frac{3 \times 4080}{544 + 510 + 480} = \frac{12240}{1534} = \text{Rs. 7.98}$$

Hence, option B is correct.

6. Let, the expenditure of ninth person = ₹ x.

Total expenditure of 8 persons =  $8 \times 30 = ₹ 240$

According to the question,

$$x - \frac{x + 240}{9} = 20$$

$$\Rightarrow 9x - x - 240 = 180$$

$$\Rightarrow 8x = 180 + 240 = 420$$

$$\Rightarrow x = \frac{420}{8} = \text{Rs. 52.5}$$

Now, total expenditure =  $240 + 52.5 = \text{Rs. 292.5}$

Hence, option C is correct.

7. Given, the average price of a pencil = Rs. 2

$\therefore$  Total price of 75 pencils =  $75 \times 2 = \text{Rs. 150}$

Let the price of a pen = Rs. x.

$\therefore$  Total price of 30 pens = Rs. 30x

According to the question,

$$150 + 30x = 510$$

$$\Rightarrow 30x = 510 - 150 = 360$$

$$\Rightarrow x = \frac{360}{30} = \text{Rs. 12}$$

Now, Required average =  $\frac{\text{Total price of pens}}{\text{Number of pens}} = \frac{30 \times 12}{30} = ₹ 12$

Hence, option D is correct.

**8.** Average of  $x$ ,  $y$  and  $z = 45$

$$\therefore x + y + z = 45 \times 3 = 135 \dots(i)$$

According to the question,

$$x = \frac{y+z}{2} + 9$$

$$\Rightarrow 2x - y - z = 18 \dots(ii)$$

Again, according to the question,

$$\frac{y+z}{2} = y + 2$$

$$\Rightarrow z - y = 4 \dots(iii)$$

By equations (i) and (ii),

$$3x = 153 \Rightarrow x = 51$$

By equation (i) and (iii),

$$x + 2z = 139$$

$$\Rightarrow 51 + 2z = 139$$

$$\Rightarrow 2z = 139 - 51 = 88 \Rightarrow z = 44$$

Now, difference of  $x$  and  $z = x - z = 51 - 44 = 7$

Hence, option C is correct.

**9.** Given, Average of  $m$  numbers =  $n^2$

$$\therefore \text{Sum of } m \text{ numbers} = mn^2$$

And, average of  $n$  numbers =  $m^2$

$$\therefore \text{Sum of } n \text{ numbers} = nm^2$$

$$\text{Now, average of } (m+n) \text{ numbers} = \frac{mn^2 + nm^2}{m+n} = \frac{mn(m+n)}{m+n} = mn$$

Hence, option C is correct.

**10.** To solve this question, we can apply short-trick

$$\text{Average after } n \text{ innings} = x - y(n-1)$$

$$\text{Where, } x = 100; y = 9; n = 9$$

$$\therefore \text{Required average} = 100 - 9(9-1)$$

$$= 120 - 78 = 28 \text{ runs}$$

Hence, option C is correct.



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