# Average Questions for CLAT, CDS & SSC Exams.

## Average Quiz 5

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

**1. Consider the sequence of 5 consecutive integers. If the average of first three is t. The average of all five integers is:**

A. t + 2 B. t + 1 C. t + 3 D. t

**2. The arithmetic mean of the following numbers**

**1, 2, 2, 3, 3, 4, 4, 4, 4, 5, 5, 5, 5, 5, 6, 6, 6, 6, 6, 6 and 7, 7, 7, 7, 7, 7, 7, is**

A. 4 B. 5 C. 14 D. 20

**3. If average weight of a family is 'y' kg. If a guest weighing 30 kg arrives then the average weight is increases by 1 kg. If the weight of this guest had been 18 kg then the average weight of the family would have decreased by 1 kg. Find 'y'.**

A. 28 B. 24 C. 30 D. 22

**4. The average of 11 results is 50. If the average of the first six results is 49 and that of the last six is 52. The sixth no. is?**

A. 48 B. 50 C. 52 D. 56

**5. A number is such that when it is multiplied by 8, it gives another number which is as much above from 270 as the original number (itself) is below 270. The average of the original number and the resultant number is:**

A. 33.75 B. 190 C. Can't be determined D. None of these

**6. If the average of 6 consecutive even number is 25, the difference between the largest and the smallest number is**

A. 8 B. 10 C. 12 D. 14

**7. The average monthly expenditure of a family for the first four months is Rs. 2570, for the next three months Rs. 2490 and for the last five months Rs. 3030. If the family saves Rs. 5320 during the whole year, the average monthly income of the family during the years is**

A. Rs. 3000 B. Rs. 3185 C. Rs. 3200 D. Rs. 3580

**8. A man spends Rs. 1800 monthly on an average for the first four months and Rs. 2000 monthly for the next eight months and saves Rs. 5600 a year. His average monthly income is**

A. Rs. 2000 B. Rs. 2200 C. Rs. 2400 D. Rs. 2600

**9. The average of first three numbers is double of the fourth number. If the average of all the four numbers is 12, find the 4th number.**

A. 16 B. 20 C. $\frac{48}{7}$ D. $\frac{18}{7}$

**10. The average of 26, 29, t, 35 and 43 lies between 25 and 35. If 't' is always an integer and greater than the average of the given integers then the value of 't' is:**

A. 33 < t < 47 B. 34 < t < 43 C. 33 < t < 42 D. 42 < t < 45

**Correct Answers:**

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

## Explanations:

**1.** Let the 3 integers be

a – 1, a, a + 1. then average is-

$$\Rightarrow \frac{a-1+a+a+1}{3} = \frac{3a}{3} = t \Rightarrow a = t.$$

Similarly, the average of 5 numbers is

$$\Rightarrow \frac{a-1+a+a+1+a+2+a+3}{5} = \frac{5a+5}{5} = (a+1) = t+1.$$

Hence, option B is correct.

**2.**

$$\text{Reqd. mean} = \frac{1\times1+2\times2+3\times3+4\times4+5\times5+6\times6+7\times7}{1+2+3+4+5+6+7}$$

$$\Rightarrow \frac{1^2+2^2+3^2+.....+7^2}{1+2+3+.....+7}$$

$$\Rightarrow \frac{\frac{n(n+1)(2n+1)}{6}}{\frac{n(n+1)}{2}}$$

[∵ sum of squares of n natural numbers]

[∵ sum of n natural numbers]

$$\Rightarrow \frac{(2n+1)}{3} \Rightarrow \frac{2\times7+1}{3} = \frac{15}{3} = 5.$$

Hence, option B is correct..

**3.** Let the number of family members be x.
Therefore, the total weight = xy
Equation in the 1st scenario:
(x + 1) (y + 1) = xy + 30
xy + x + y + 1 = xy + 30
x + y = 29 .....(i)
Equation in the 2nd scenario:
(x + 1) (y – 1) = xy + 18
xy + y – x – 1 = xy + 18

y - x = 19 ....(ii)
Solving equations (i) and (ii), we get
2y = 48, Therefore, y = 24.
Hence, option B is correct.

**4.** Sixth results = total no. of first six results + total no. of last six results – total no. of 11 results
= (6 × 49) + (6 × 52) – (11 × 50)
= 294 + 312 – 550 = 56.
Hence, option D is correct.

**5.** Let the number be x then.
270 – x = 8x – 270
⇒ x = 60 and 8x = 480
Therefore the average of 60 and 480 is 270.
Hence, option D is correct.

**6.** Let the consecutive numbers are x, x + 2, x + 4, ……., x + 10.
Now, Required difference = x + 10 – x = 10.
Hence, option B is correct.

**7.** Total annual income = Expenditure + Savings
= (4 × 2570 + 3 × 2490 + 5 × 3030) + 5320
= (10280 + 7470 + 15150) + 5320
= 32900 + 5320 = 38220

∴ Required average monthly income = $\frac{38220}{12}$ = Rs. 3185.

Hence, option B is correct.

**8.** Total annual income = Expenditure + Savings
= (4 × 1800 + 8 × 2000) + 5600
= (7200 + 16000) + 5600
= 23200 + 5600 = Rs. 28800

∴ Required average monthly income = $\frac{28800}{12}$ = Rs. 2400.

Hence, option C is correct.

**9.**

Average of first three numbers is = $\frac{a + b + c}{3} = 2d \Rightarrow a + b + C = 6d$ ....(i)

Average of all four numbers = $\frac{a + b + c + d}{4} = 12 \Rightarrow a + b + c + d = 48$

$\Rightarrow 6d + d = 48 \Rightarrow d = \frac{48}{7}$.

Hence, option C is correct.

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**10.** Average of 26, 29, 35 and 43 is 33.25, Also the average of 26, 29, t, 35 and 43 lies between 25 and 35 i.e.,

$25 < \frac{26 + 29 + t + 35 + 43}{5} < 35$

$\Rightarrow 125 < 26 + 29 + t + 35 + 43 < 175$

$\Rightarrow 125 < 133 + t < 175$

$\Rightarrow t < 42$

**Since the value of n is an integer and greater than 33.25 then 33 < t < 42; for every integer t.**

**Hence, option (C) is correct.**