# APTITUDE - AVERAGES EXAMPLES

 



**Q 1 - The average of 20 numbers is zero. Of them, at the most, how many may be greater than zero?**

A - 19

B - 10

C - 0

D - 1

**Answer - A**

**Explanation**

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Average of 20 numbers = 0.
 Therefore Sum of 20 numbers = (0 x 20) = 0
It is quite possible that 19 of these numbers may be positive and if their sum is
a, then 20th number is (-a).
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**Q 2 - Find the average of all the numbers between 6 and 34 which are divisible by 5?**

A - 30

B - 24

C - 20

D - 18

**Answer - C**

**Explanation**

$$\text{Average} = (10 + 15 + 20 + 25 + 30)/5 = 100/5 = 20.$$

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**Q 3 - The average of first five multiples of 3 is?**

A - 15

B - 12

C - 3

D - 9

**Answer - D**

**Explanation**

$$\text{Average} = 3(1 + 2 + 3 + 4 + 5)/5 = 45/5 = 9$$

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**Q 4 - The average of first nine prime numbers is?**

A - 10

B - $11\frac{1}{9}$

C - 9

D - $11\frac{2}{9}$

**Answer - B**

**Explanation**

$\text{Average} = \frac{(2 + 3 + 5 + 7 + 11 + 13 + 17 + 19 + 23)}{9} = \frac{100}{9} = 11\frac{1}{9}$

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**Q 5 - A student was asked to find the arithmetic mean of the numbers 3, 11, 7, 9, 15, 13, 8, 19, 17, 21, 14, and z?**

A - 3

B - 7

C - 17

D - 31

**Answer - B**

**Explanation**

$\text{Clearly, we have } \frac{(3 + 11 + 7 + 9 + 15 + 13 + 8 + 19 + 17 + 21 + 14 + z)}{12} = 12$
$\text{or } 137 + z = 144$

$\text{or } z = 144 - 137 = 7.$

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**Q 6 - If the mean of 5 observation z, z + 2, z + 4, z + 6 and z + 8 is 11, then the mean of the last three observation is?**

A - 11

B - 13

C - 15

D - 17

**Answer - B**

**Explanation**

$\text{we have : } \frac{(z + (z + 2) + (z + 4) + (z + 6) + (z + 8))}{5} = 11 \text{ or } 5z + 20 = 55 \text{ or } z = 7.$
$\text{So the numbers are } 7, 9, 11, 13, 15.$
$\text{therefore required mean} = \left(\frac{11 + 13 + 15}{3}\right)$
$= \frac{39}{3} = 13.$

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**Q 7 - The average of the two-digit numbers, which remain the same when the digits interchange their positions, is?**

A - 55

B - 33

C - 44

D - 66

**Answer - A**

**Explanation**

$$\text{Average} = (^{11 + 22 + 33 + 44 + 55 + 66 + 77 + 88 + 99}/_{9})$$
$$(^{(11 + 99) + (22 + 88) + (33 + 77) + (44 + 66) + 55}/_{9})$$
$$(^{4 \times 110 + 55}/_{9})$$
$$(^{495}/_{9}) = 55$$

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**Q 8 - The average of a non-zero number and its square is 5 times the number. The number is?**

A - 9

B - 17

C - 29

D - 295

**Answer - A**

**Explanation**

Let the number be z. then,

$$z + z^{2}/_{2} = 5z$$
$$= z^{2} - 9z = 0$$

$$z (z - 9) = 0$$
$$z = 0 \text{ or } z = 9$$

so the number is 9.

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**Q 9 - The average of 7 consecutive number is 20. The largest of these numbers is?**

A - 20

B - 22

C - 23

D - 24

**Answer - C**

**Explanation**

Let the number be z, z + 1, z + 2, z + 3 ,z + 4, z + 5 ,z + 6. then, $^{(z + (z + 1) + (z + 2) + (z + 3) + (z + 4) + (z + 5) + (z + 6))}/_{7} = 20$

$$7z + 21 = 140 \text{ or } 7z = 119 \text{ or } z = 17$$

Largest number = z + 6 = 17 + 6 = 23

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**Q 10 - The average of five consecutive odd numbers is 61. What is the difference between the highest and lowest numbers?**

A - 9

B - 8

C - 10

D - 11

**Answer - B**

**Explanation**

Let the number be z, z + 2, z + 4, z + 6 and z + 8. then, $(z + (z + 2) + (z + 4) + (z + 6) + (z + 8))/5 = 61$

5z + 20 = 305 or z = 57

so the required number is = (57 + 8) - 57 = 8

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**Q 11 - The sum of three consecutive odd numbers is 38 more than the average of these numbers. What is the first of these numbers?**

A - 17

B - 13

C - 19

D - none

**Answer - A**

**Explanation**

Let the number be z, z + 2, and z + 4. then, $(z + z + 2 + z + 4) - (z + z + 2 + z + 4)/3 = 38$

2(3z + 6) = 114 or 6z = 102 or z = 17.

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**Q 12 - The average age of the boys in a class is 16 years and that of the girls is 15 years. The average age for the whole class is**

A - 15 years

B - 15.5 years

C - 16 years

D - Cannot be computed with the given information

**Answer - D**

**Explanation**

Clearly to find the average we ought to know the number of boys, girls or students in the class neither of which is given. So, data is inadequate.

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**Q 13 - The average annual income (in Rs.) of certain agricultural workers is S and that of other workers is T. The number of agriculture workers is 11 times that of other workers. Then the average monthly income (in Rs.) of all the workers is?**

A - $S + T/2$

B - $^{11S + T}/_{12}$

C - $^{1 +}/_{11S}T$

D - $^{S + 11T}/_{2}$

**Answer - B**

**Explanation**

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Let the number of other workers be z.
then, number of agricultural workers = 11z
Total number of workers = 12z

Therefore Average monthly salary = S x 11z + T x z/12z = 11S + T/12
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**Q 14 - A family consists of grandparents, parents and three grandchildren. The average age of the grandparents is 67 years, that of the parent is 35 years and that of the grandchildren is 6 years. What is the average age of the family?**

A - $28^{4}/_{7}$

B - $31^{5}/_{7}$

C - $32^{1}/_{7}$

D - none

**Answer - B**

**Explanation**

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Required average = (67 x 2 + 35 x 2 + 6 x 3/2 + 2 + 3) = (134 + 70 + 18/7)
= 222/7 = 31 5/7
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**Q 15 - A library has an average of 510 visitors on Sundays and 240 on other days. The average number of visiters per day in a month of 30 days begining with a Sunday is?**

A - 276

B - 280

C - 285

D - 250

**Answer - C**

**Explanation**

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Since the month begins with a sunday, so there will be five sundays in the month
Therefore Required average = (510 x 5 + 240 x 25/30)
= 8550/30 = 285
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**Q 16 - If the average marks of three batches of 55, 60 and 45 students respectively is 50, 55 and 60, then the average marks of all the students is?**

A - 53.33

B - 54.68

C - 55

D - none

**Answer - B**

**Explanation**

$$\text{Required average} = \left(\frac{55 \times 50 + 60 \times 55 + 45 \times 60}{55 + 60 + 45}\right)$$
$$\left(\frac{2750 + 3300 + 2700}{160}\right) = \left(\frac{8750}{160}\right) = 54.68$$

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**Q 17 - The average weight of 16 boys in a class is 50.25 kgs and that of the remaining 8 boys is 45.15 kgs. Find the average weight of all the boys in the class?**

A - 48.55

B - 49.25

C - 45

D - 47

**Answer - A**

**Explanation**

$$\text{Required average} = \left(\frac{50.25 \times 16 + 45.15 \times 8}{16 + 8}\right)$$
$$\left(\frac{804 + 361.20}{24}\right) = \left(\frac{1165.20}{24}\right) = 48.55$$

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**Q 18 - A car owner buys petrol at Rs. 7.50, Rs. 8 and Rs. 8.50 per litre for three successive years. What approximately is the average cost per litre of petrol if he spends Rs. 4000 each year?**

A - 7.98

B - 8

C - 8.50

D - 9

**Answer - A**

**Explanation**

$$\text{Total quantity of petrol consumed in 3 years.} = \left(\frac{4000}{7.50} + \frac{4000}{8} + \frac{4000}{8.50}\right) \text{litres}$$
$$= 4000\ \frac{2}{15} + \frac{1}{8}\ \frac{2}{17} = \frac{76700}{51} \text{ litres}$$
$$\text{Total amount spent} = \text{Rs. } (3 \times 4000) = \text{Rs } 12000$$
$$\text{Therefore Average cost} = \text{Rs. } \left(\frac{12000 \times 51}{76700}\right) = \text{Rs. } \frac{6120}{767}$$
$$= \text{Rs. } 7.98.$$

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**Q 19 - The average of six numbers is z and the average of three of these is y. If the average of the remaining three is w, then?**

A - 2z = 2y + 2w

B - z = 2y + 2w

C - z = y + w

D - 2z = y + w

**Answer - D**

**Explanation**

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Clearly, we have: z = (3y + 3w)/6
or 2z = y + w.
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**Q 20 - Out of 9 persons, 8 persons spent Rs. 30 each for their meals. The ninth one spent Rs. 20 more than the average expenditure of all the nine. The total money spent by all of them was?**

A - 290

B - 260

C - 292.50

D - 400.50

**Answer - C**

**Explanation**

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Let the average expenditure be Rs z then,
9z = 8 x 30 + (z + 20) or 9z = z + 260 or 8z = 260 or z = 32.50.
Therefore total money spent = 9z = Rs. (9 x 32.50) = Rs. 292.50.
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