

Quiz Date: 19th February 2020

Q1. Average age of a man, woman and their son is 30 years. Man's age is two year more than his wife and age of son is $\frac{1}{4}$ th the sum of age of his mother and father. When two other family members were added, new average becomes 27 years. If difference between age of two new members are one year then find difference between son and the new member who is elder.

- (a) 7 years
- (b) 8 years
- (c) 4 years
- (d) 2 years
- (e) 5 years

Q2. The average age of a group of six children is 15 years. From the group, two children left, whose ages were 3 years more and 5 years more than the average age. 4 new children, whose average age is 4 years more than the given average age, join the group. Find the new average age.

- (a) 15 years
- (b) 16 years
- (c) 17 years
- (d) 18 years
- (e) 12 years

Q3. Ratio of ages of Amit and his father 5 years ago is 2 : 5. If age of his mother is 20% more than the present age of his father. Then find difference of age of his father and mother after 10 years given that age of Amit 3 year hence will be 32 years?

- (a) 11 years
- (b) 13 years
- (c) 8 years
- (d) 17 years
- (e) 15 years

Q4. Average weight of group of some children increases by 1 when 2 children join them. If instead of these 2 children another 2 children join the group then average decreased by 1 but total weight becomes more than initial weight. If difference between the sums of weight of 2 children of previous one to later one is 14 then find the initial number of children in group.

- (a) 7
- (b) 5
- (c) 3
- (d) 6
- (e) None of these

Q5. The second lowest number of five consecutive odd number series is four more than the $\frac{5}{12}$ th of the third highest number of a five another consecutive even number series. If the

average of five consecutive even number series is 60, then find the difference between the highest number of both the series?

- (a) 27
- (b) 29
- (c) 31
- (d) 33
- (e) 37

Q6. The Ratio of ages of Mr. A and his wife are 4:3, and his son age's is 30% of the age of Mr. A. the age of his daughter is 50% more than that of his son. 5 years ago, the average age of his wife and daughter is 31 years. find out the difference between average age of his wife and daughter and that of Mr. A and his son.

- (a) 3 years
- (b) 4 years
- (c) 8 years
- (d) 6 years
- (e) 7 years



Q7. Average age of Veer, Ayush and Sameer is 26 year and after 3 years average age of Veer, Ayush and Divyaraj will be $28\frac{2}{3}$ years. If sum of present age of Sameer and Divyaraj is 53 year then find the present age of Sameer.

- (a) 29 year
- (b) 27 year
- (c) 25 year
- (d) 28 year
- (e) 26 year

Q8. Average marks of Sandeep are decreased by 2 when he excludes 40 marks of social science and include 28 and 30 marks of physics and chemistry respectively. If he again add 54 marks of computer science the average becomes equal to original average. Find the number of subjects originally.

- (a) 8
- (b) 9
- (c) 10

- (d) 12
- (e) 15

Q9. The ratio of two positive number is 5:7 and average of the same two number is 222 then find out the difference between both numbers?

- (a) 36
- (b) 72
- (c) 64
- (d) 74
- (e) 38

Q10. If average of an A.P series of 10 term is 112.5% more than its first term then second term of A.P is what % of the sum of the series?

- (a) $2\frac{5}{17}\%$
- (b) $4\frac{10}{17}\%$
- (c) $5\frac{15}{17}\%$
- (d) $3\frac{16}{17}\%$
- (e) $5\frac{7}{17}\%$

Q11. Average of five numbers is 91. Average of first, third and fifth number is 83 and second number is less than or equal to the fourth number. Then, find the maximum possible value of second number.

- (a) 206
- (b) 153
- (c) 105
- (d) 103
- (e) Cannot be determined.

Q12. The average of four distinct prime number p, q, r and s is 54. Where $p < q < r < s$. p and s are equidistant from 55 whereas q and r be equidistant from 53. p and q are equidistant from 45 whereas r and s are equidistant from 63. Find difference between p and s.

- (a) 20
- (b) 24
- (c) Can't be determined
- (d) 25
- (e) 27

Solutions

S1. Ans.(e)

Sol.

Let age of man is x years

Age of woman = (x - 2) years

$$\text{Age of son} = \frac{(x+x-2)}{4}$$

$$= \frac{(x-1)}{2} \text{ years}$$

ATQ—

$$\frac{x+(x-2)+\frac{(x-1)}{2}}{3} = 30$$

$$\frac{2x+2x-4+x-1}{2} = 90$$

$$5x = 185$$

$$x = 37 \text{ years}$$

$$\text{son age} = \frac{(37-1)}{2} = 18 \text{ years}$$

let age of two new members be y years and $(y - 1)$ years

ATQ—

$$\frac{90+(y+y-1)}{5} = 27$$

$$2y - 1 = 135 - 90$$

$$y = \frac{46}{2}$$

$$y = 23$$

$$\text{Required difference} = 23 - 18 = 5 \text{ years}$$



S2. Ans.(b)

$$\text{Sol. Sum of the ages of 6 children} = 15 \times 6 = 90$$

$$\text{When two children left, sum of the ages of 4 children} = 90 - (18 + 20) = 52$$

$$\text{Sum of the ages of New children} = (15 + 4) \times 4 = 76$$

$$\therefore \text{Required average} = \frac{76+52}{8}$$

$$= \frac{128}{8} = 16 \text{ years}$$

S3. Ans.(b)

Sol.

$$\text{Amit age 5 years ago} = 32 - 3 - 5 = 24 \text{ years}$$

$$\therefore \text{age of his father 5 years ago} = \frac{24}{2} \times 5 = 60 \text{ years}$$

$$\text{Present age of his father} = 60 + 5 = 65 \text{ years}$$

$$\text{Present age of his mother} = 65 \times \frac{120}{100} = 78 \text{ years.}$$

Required difference = $78 - 65 = 13$ years.

S4. Ans.(b)

Sol.

Let initial no. of child in group $\rightarrow y$

And average weight $\rightarrow x$

Average weight increased when, weight of child join, have higher weight.

So,

Weight of 2 children higher than average weight $\Rightarrow (x + 1)(y + 2) - xy \dots(i)$

Weight of 2 child less than average weight $\Rightarrow (x - 1)(y + 2) - xy \dots(ii)$

Now its given

$$[(x + 1)(y + 2) - xy - ((x - 1)(y + 2) - xy)] = 14$$

$$\text{Solving} \Rightarrow y = 5$$

$$y = 5$$

S5. Ans.(b)

Sol.

Let five consecutives even number series

$$= a, (a+2), (a+4), (a+6), (a+8)$$

Five consecutive odd number series = $b, (b+2), (b+4), (b+6), (b+8)$

ATQ—

$$\frac{a+(a+2)+(a+4)+(a+6)+(a+8)}{5} = 60$$

$$5a + 20 = 300$$

$$a = 56$$

Third highest number of even series = $56 + 4 = 60$

Second lowest number of odd number series

$$= 60 \times \frac{5}{12} + 4$$

$$= 29$$

Highest number of even number series = $(56 + 8) = 64$

Highest number of odd number series = $(29 - 2 + 8) = 35$

Required difference = $64 - 35 = 29$

S6. Ans (a).

Sol.

Let ages of Mr. A. and his wife is $40x$ and $30x$ years respectively.

ATQ,

His son age = 30% of $40x$

$$= 12x$$

And his daughter age = 50% more than that of his son

$$= \frac{150}{100} \times 12x$$

$$= 18x$$

His daughter and wife's present age = $(31+5) \times 2 = 72$ years

$$30x + 18x = 72 \text{ years}$$

$$x = \frac{3}{2}$$

So, age of his son = 18 years
 his Daughter = 27 years
 Mr. A. = 60 years
 His wife = 45 years

So,

$$= \frac{(60+18)}{2} - \frac{(27+45)}{2}$$

$$= 3 \text{ years}$$

S7. Ans.(b)

Sol.

Sum of present age of Veer, Ayush and Sameer = $26 \times 3 = 78$ year

Sum of age of Veer, Ayush and Sameer after 3 years = $78 + 9 = 87$ year

Sum of age of Veer, Ayush and Divyaraj after 3 years = 86 years

So,

Sameer's age - Divyaraj's age = 1 year

and

Sameer's age + Divyaraj's age = 53 years

On solving both equations

Sameer's present age = 27 years

S8. Ans.(a)

Sol.

Let, number of subjects be x and average marks y

\therefore Total marks = xy

Atq,

$$xy - 40 + (28 + 30) = (x + 1)(y - 2)$$

$$\Rightarrow 20 = y - 2x \quad \dots(i)$$

And,

$$xy + 18 + 54 = (x + 2) \times y \Rightarrow y = 36 \quad \dots(ii)$$

From (i) and (ii)

$$x = 8$$

S9. Ans (d)

Sol.

Let two number = $5x$ and $7x$

$$\text{Average} = \frac{5x+7x}{2} = 6x$$

$$x = \frac{222}{6} = 37$$

So, difference between number = $7x - 5x = 2x$

$$2 \times 37 = 74$$

S10. Ans.(c)

Sol.

Let first term = a

Common difference = d

$$\text{Sum of 10 terms} = \frac{10}{2} [2a + (10-1)d]$$

$$\text{Average of sum} = \frac{1}{2} [2a + (10-1)d]$$

Now,

$$a + \frac{112.5a}{100} = \frac{1}{2} [2a + (10-1)d]$$

Solving we get, $a = 4d$

$$\text{Sum of A.P} = 85d$$

$$\text{Second term} = 5d$$

$$\text{Required\%} = \frac{5d}{85d} \times 100 = \frac{100}{17} \% = 5 \frac{15}{17} \%$$

S11. Ans.(d)

Sol. Let the first, second, third, fourth and fifth number be 'a', 'b', 'c', 'd' & 'e' respectively.

$$\text{So, } \frac{a+b+c+d+e}{5} = 91$$

$$a + b + c + d + e = 455$$

$$\text{Now, } \frac{a+c+e}{3} = 83$$

$$a + c + e = 249$$

$$\text{So, } (b+d) = 455 - 249 = 206$$

ATQ

Since $b \leq d$, so, b can take values between 0 and 103.

So, required answer is 103.

S12. Ans.(b)

Sol.

p and q are equidistant from 45 i.e. $p = 43$ and $q = 47$ similarly,

p and s are equidistant from 55.

$$\text{i.e. } s = 55 + (55 - 43)$$

$$= 67$$

$$\text{Required difference} = 67 - 43$$

$$= 24$$

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