Important Quant Questions Asked in Recent Exams Conducted by TCS
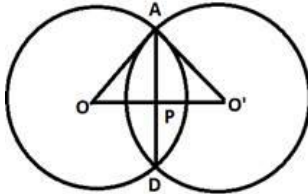
1.If two equal circles whose centres are O and O' intersect each other at the point A and D. OO' = 12 cm and AD = 16 cm, then radius of the circle is:
A. 15 cm
B. 10 cm
C. 14 cm
D. 12 cm
Ans. B
Sol.

Since the both circle have equal radius-

Hence, $OP = PO' = \frac{12}{2} = 6$

$AP = PD = \frac{16}{2} = 8$

In $\triangle APO'$,

$O'A^2 = 8^2 + 6^2 = 100$

O'A = 10.

2.The product of two numbers is 6760 and their HCF is 13. How many such pair of numbers can be formed?
A. 2
B. 3
C. 1
D. 4

Ans. A
Sol.
Let the number be 13x and 13 y respectively.

$13x \times 13y = 6760$

$169xy = 6760$

$xy = 40$

Total combinations $(8,5), (10,4), (40,1), (20,2)$

But we can take $(8,5), (40,1)$ only.
So only 2 pairs are possible.

3.12 buckets of water fill a tank when tile capacity of each bucket is 13.5 litres. How many buckets will be needed to fill the same tank, if the capacity of each bucket is 9 litres?
A. 15
B. 16
C. 18
D. 17
Ans. C
Sol.
Capacity of 1 bucket = 13.5 litre
Capacity of 12 bucket = 12 × 13.5
Total Capacity = 162
Required,

$$\frac{Total\ capacity}{Volume\ of\ 1\ Bucket} = \frac{162}{9}$$

=18 Bucket.

4.A boy increases his speed to 9/5 times of his original speed. By this he reaches his school 30 minutes before the usual time. How much time does he takes usually?
A. 67.75 minutes
B. 67.50 minutes
C. 67.25 minutes
D. 67.10 minutes
Ans. B
Sol.
Let the original speed be = s_1
Increased speed be = s_2
A.T.Q.

$$s_2 = \frac{9}{5} \times s_1$$

$$\frac{s_1}{s_2} = \frac{5}{9}$$

We know

$$s \propto \frac{1}{t}$$

Hence,

$$\frac{t_1}{t_2} = \frac{9}{5}$$

$$t_1 - t_2 = 9 - 5 = 4\ unit$$

$$4unit = 30min$$

$$1\ unit = 7.5\ min$$

Required original time
$$= 9 \times 7.5 = 67.5\ minute.$$

5.The average of 26 numbers is zero. Of them, how many may be greater than zero, at the most?
A. 25
B. 20
C. 0
D. 15

Ans. A
Sol.
Since the average of 26 number = 0

Let the first 25 number be 1 and last number = x

$$Avg = \frac{Total\ sum}{Total\ terms}$$

$$= \frac{1 + 1 + 1 + - - -25\ times + x}{26}$$

$$0 = \frac{25 + x}{26}$$

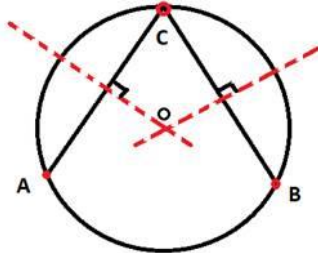$x = -25$

Hence, we can take only 25 numbers which is greater than 0.

6. A unique circle can always be drawn through x number of given non-collinear points, then x must be
A. 2
B. 3
C. 4
D. 1
Ans. B
Sol.
To draw a unique circle, we always need minimum 3 non-colinear points.

Perpendicular bisectors of AC & BC meets at O, which is the centre of Circle.

7.(cosec A – sin A)² + (secA – cosA)² – (cotA – tanA)² is equal to :
A. 2
B. 0
C. 1
D. -1

Ans. C
Sol.

$cosec^2 A + \sin^2 A - 2cosecA \sin A + \sec^2 A + \cos^2 A - 2\cos A \sec A - \cot^2 A$
$\qquad\qquad - \tan^2 A + 2\cot A \tan A$
$= \sin^2 A + \cos^2 A + cosec^2 A - \cot^2 A + \sec^2 A - \tan^2 A - 2 - 2 + 2$
$= 1 + 1 + 1 - 4 + 2$
$= 1.$

8.The LCM of two numbers is 168 and their HCF is 12. If the difference between the numbers is 60, what is the sum of the numbers?
A. 112
B. 164
C. 108
D. 122

Ans. C
Sol.

Let the number be $12x$ and $12y$ respectively.
$L.C.M \times H.C.F. = 12x \times 12y$
$168 \times 12 = 12 \times 12xy$
$xy = 14 \dots. (i)$
Given
$12x - 12y = 60$

4

$x - y = 5$
$y = x - 5$

We put the value of y in equation (i).
$x(x - 5) = 14$
$x^2 - 5x - 14 = 0$
$x^2 - 7x + 2x - 14 = 0$
$x(x - 7) + 2(x - 7) = 0$
$(x - 7)(x + 2) = 0$
$x = -2, 7$

We take the positive value of x which is 7 so $y = 2$
Required $no. 12 \times 7 = 84$
$= 12 \times 2 = 24$
Hence, the sum of no $= 84 + 24$
$= 108$.

9. The perimeter of a square is equal to the perimeter of a rectangle of length 16 cm and breadth 14 cm. Find the circumference of a semicircle whose diameter is equal to the side of the square.
A. 31.57 cm
B. 21.57 cm
C. 38.57 cm
D. 25.57 cm

Ans. C
Sol.
Let the side of square be = a
Length of perimeter $l = 16cm$
Breadth of perimeter $b = 14cm$
A.T.Q.
$4a = 2(l + b)$
$4a = 2(30) = 60$
$a = 15$
Let the diameter of semicircle be d
Which is equal to the side of square.
$d = a = 15$
Radius of semicircle
$r = \dfrac{d}{2} = 7.5cm$
Circumference of Semicircle
$= (\pi r + 2r)$
$= \dfrac{22}{7} \times 7.5 + 15$
$= \dfrac{165}{7} + 15$
$= 23.57 + 15$
$= 38.57$.

10. The speed of a car increases by 2 km/h after every one hour. If the distance travelled in the first one hour was 35km, what was the total distance travelled in 12 hours?
A. 560 km
B. 650 km
C. 558 km
D. 552 km

Ans. D
Sol.
A.T.Q.
Distance travelled in 1st hour = 35
Distance travelled in 2nd hour = 37
So, distance travelled in 12 hours-

$$S_{12} = 35 + 37 + 39 + - - - - 12 terms$$

$$S_n = \frac{n}{2}[2a + (n-1)d]$$

Here $a = 35, d = 2, n = 12$

$$S_{12} = \frac{12}{2}[70 + 11 \times 2]$$

$$= 6 \times 92 = 552 Km.$$

11. Fresh fruit contains 68% water and dry fruit contains 20% water. How much dry fruit can be obtained from 100 kg of fresh fruits?
A. 80
B. 60
C. 40
D. 20

Ans. C
Sol.
The quantity of pulp will be same in both cases.
The quantity of pulp in 100 kg of fresh fruit

$$= (100 - 68)\% = 32\% \, of \, 100$$

$$= 32 \, Kg$$

Quantity of pulp in dry fruit which is

$$(100 - 20) = 80\%$$

$$80\% = 32 \, kg$$

Hence, quantity of dry fruits

$$= 100\% = \frac{32}{80} \times 100$$

$$= 40 Kg.$$

12. If roots of x² — 4x + a = 0 are equal, then a=
A. —4
B. 4
C. 8
D. —8

Ans. B
Sol.

Let the roots of equation $x^2 - 4x + a = 0$ be α and β.

Since $\alpha = \beta$ (given)
Sum of roots,
$$\alpha + \beta = -\frac{b}{a} = 4$$
$$\Rightarrow 2 \times \alpha = 4$$
$$\Rightarrow \alpha = 2$$
Product of Roots,
$$\alpha . \beta = \alpha . \alpha = \frac{c}{a}$$
$$\alpha^2 = a$$
$$a = 4.$$

13.The average weight of 16 boys in a class is 60.25 kg and that of the remaining 10 boys is 45.75 kg. The average weight of all boys in the class is:
A. 56.27
B. 55.37
C. 54.67
D. 53.76

Ans. C
Sol.
Sum of weight of 16 boys = 16 x 60.25 = 964
Sum of Remaining 10 boys = 45.75 x 10 = 457.5
Total weight of 26 boys = 964 + 457.5
= 1421.5
Required Average
$$= \frac{1421.5}{26} = 54.67.$$

14.The unequal side of an isosceles is 2 cm. The medians drawn to the equal sides are perpendicular. The area of the triangle is:
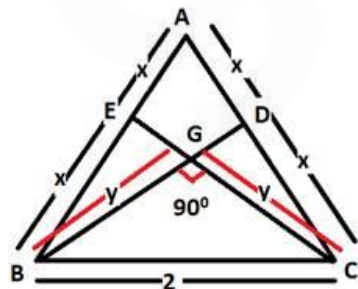A. 2 cm²
B. 3 cm²
C. 5 cm²
D. 1 cm²

Ans. B
Sol.
Let the isosceles triangle be ABC, where AB = AC and BC = 2cm.

We know that the length of medians in isosceles triangle drawn to equal side are equal.
$$BD = CE$$
medians cut each other in the ratio of 2 : 1
So,

$BG = GC$

Let $BG = GC = y$

In $\Delta BGC, \angle BGC = 90^0$

$BG^2 + GC^2 = BC^2$ (Pythagoras theorem)

$2y^2 = 4$

$y = \sqrt{2}$

We know that medians cut each other in the ratio of 2 : 1 = BG : GD

$BG = y = \sqrt{2}$

$2 \ unit = \sqrt{2}$

$1 \ unit = \dfrac{1}{\sqrt{2}}$

$GD = \dfrac{1}{\sqrt{2}}$

$\because AB = AC$ and BD and CE are medians.

So, $AE = BE, AB = BC = x$

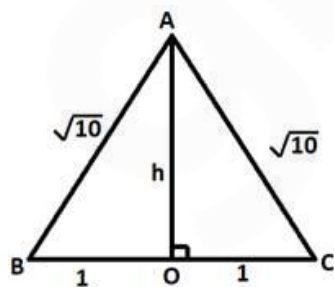In $\Delta GDC, \angle CGD = 90^0$

$GD^2 + GC^2 = CD^2$

$\left(\dfrac{1}{\sqrt{2}}\right)^2 + \left(\sqrt{2}\right)^2 = x^2$

$\dfrac{1}{2} + 2 = x^2$

$x = \sqrt{\dfrac{5}{2}}$

$2x = \dfrac{\sqrt{5}}{\sqrt{2}} \times 2 = \sqrt{10}$

$AB = AC = 2x = \sqrt{10}$

The length of AO be = h

In $\Delta AOC, \angle AOC = 90^0$

$AO^2 + OC^2 = AC^2$

Or

$h^2 + 1 = 10$

$h = 3$

Required Area of △ABC

$$= \frac{1}{2} \times AO \times BC$$

$$= \frac{1}{2} \times 3 \times 2 = 3 cm^2.$$

15.After giving two successive discounts each of $x\%$ on the marked price of an item, total discount is ₹259.20. If the face value of the object is ₹720, what will be the value of x?

A. 25

B. 24

C. 18

D. 20

Ans. D

Sol.

Two successive discount equivalents to

$$= -x - x + \frac{x^2}{100}$$

$$= -2x + \frac{x^2}{100}$$

Total rate of discount

$$= 259.20 \times \frac{100}{720}$$

$$= 36\%$$

Now,

$$-2x + \frac{x^2}{100} = -36$$

$$x^2 - 200x + 3600 = 0$$

$$x^2 - 180x - 20x + 3600 = 0$$
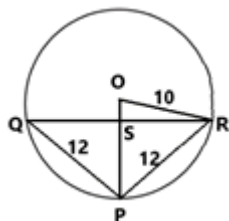
$$(x - 180)(x - 20) = 0$$

$$x = 20 \ or \ 180$$

$$\Rightarrow x = 20\%$$

16.The radius of a circle with O center is 10 cm, PQ and PR are the chords of 12 cm. PO, cuts the chord QR at point S. What is the length of OS?

A. 3.2 cm

B. 2.8 cm

C. 3 cm

D. 2.5 cm

Ans. B

Sol.

Let OS = x, then
$$OR^2 - OS^2 = PR^2 - PS^2$$
$$10^2 - x^2 = 12^2 - (10 - x)^2$$
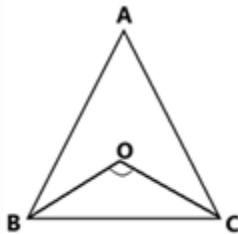$$100 - x^2 = 144 - 100 - x^2 + 20x$$
$$20x = 56$$
$$x = 2.8 \, cm$$

17.In Δ ABC, the bisectors of ∠B and ∠C meet at point O inside the triangle. If ∠BOC = 122°, what will be the measure of ∠A?
A. 62°
B. 64°
C. 72°
D. 68°

Ans. B
Sol.

$$\angle BOC = 122°$$
$$\angle BOC = 90° + \frac{1}{2}\angle A$$
$$122° - 90° = \frac{1}{2}\angle A$$
$$\angle A = 2 \times 32° = 64°$$

18.The ratio of efficiencies of A, B and C is 2: 5: 3. On working together, all three of them can complete work in 27 days. In how many days will both B and C together complete the 4/9th part of that work?
A. 15 days
B. $17\frac{1}{7}$ days
C. 27 days
D. 24 days

Ans. A
Sol.
 Ratio of efficiencies, A:B:C = 2:5:3
$$(A + B + C):(B + C) = 10:8 = 5:4$$
$$\frac{M_1 \times D_1}{W_1} = \frac{M_2 \times D_2}{W_2}$$
$$\frac{5 \times 27}{1} = \frac{4 \times D_2}{\frac{4}{9}}$$
$$D_2 = \frac{5 \times 27 \times 4}{4 \times 9} = 15$$

19.If $\left(5\sqrt{5}x^3 - 81\sqrt{3}y^3\right) \div \left(\sqrt{5}x - 3\sqrt{3}y\right) = \left(Ax^2 + By^2 + Cxy\right)$ है, then the value of $\left(6A + B - \sqrt{15}C\right)$ will be?

A. 12
B. 15
C. 10
D. 9

Ans. A

Sol.

$$\frac{\left(5\sqrt{5}x^3 - 81\sqrt{3}y^3\right)}{\left(\sqrt{5}x - 3\sqrt{3}y\right)} = Ax^2 + By^2 + Cxy$$

$$\frac{\left(\sqrt{5}x - 3\sqrt{3}y\right)\left(5x^2 + 3\sqrt{15}xy + 27y^2\right)}{\sqrt{5}x - 3\sqrt{3}y} = Ax^2 + By^2 + Cxy$$

$$5x^2 + 3\sqrt{15}xy + 27y^2 = Ax^2 + By^2 + Cxy$$

$$A = 5, B = 27, C = 3\sqrt{15}$$

$$6A + B - \sqrt{15}C = 30 + 27 - 45 = 12$$

20.An amount becomes 8,028 in 3 years at a fixed percentage interest rate and 12,042 in 6 years, when the interest is compounded annually. What is the actual amount?

A. ₹ 5,352
B. ₹5,235
C. ₹ 5,253
D. ₹ 5,325

Ans. A

Sol.

$$12042 = P\left(1 + \frac{r}{100}\right)^6 \quad \text{...... (i)}$$

$$8028 = P\left(1 + \frac{r}{100}\right)^3$$

$$(8028)^2 = P^2\left(1 + \frac{r}{100}\right)^6 \quad \text{...... (ii)}$$

Dividing (ii) by (i), we get

$$P = \frac{8028 \times 8028}{12042}$$

$$= 5352$$

21.If x + y + z = 19, $x^2 + y^2 + z^2 = 133$ and $xz = y^2$, then the difference between z and x is:

A. 3
B. 4
C. 6
D. 5

Ans. D

Sol.

$$(x + y + z)^2 = x^2 + y^2 + z^2 + 2(xy + yz + zx)$$
$$19^2 = 133 + 2(xy + yz + y^2)$$
$$2y(x + y + z) = 361 - 133$$
$$2y \times 19 = 228$$
$$y = \frac{228}{38} = 6$$

Now,

$$x + z = 19 - y$$
$$x + z = 19 - 6 = 13$$
$$x - z = \sqrt{(x + z)^2 - 4xz}$$
$$= \sqrt{13^2 - 4y^2}$$
$$= \sqrt{169 - 4 \times 36}$$
$$= \sqrt{169 - 144}$$
$$= 5$$

22. If the number of 9 digits is 985x3678y, the number is divisible by 72, then the value of (4x - 3y) will be:

A. 4
B. 6
C. 5
D. 3

Ans. A

Sol.

Since the given number is divisible by 72, it must be divisible by 4, 8 and 9. Since it is divisible by 4, the last two-digit must be divisible by 4. So, possible values of y are 0, 4, 8. Since it is divisible by 8, the last three digits must be divisible by 8. As 780 and 788 are not divisible by 8, the only possible value of y is 4. Now, since the number is divisible by 9, its sum of digits will be divisible by 9.

$$9 + 8 + 5 + x + 3 + 6 + 7 + 8 + y$$
$$= 46 + x + y$$
$$= 46 + x + 4$$
$$= 50 + x$$

For x = 4, 54 is divisible by 9.

$$4x - 3y = 4 \times 4 - 3 \times 4 = 4$$

23. Four years ago, the ratio of the ages of A and B was 4: 5. Eight years from now, the ratio of the ages of A and B will be 11: 13. What is the sum of the present age of both of them?

A. 76 years
B. 72 years
C. 80 years
D. 96 years

Ans. C

Sol.

Let the ages of A and B four years ago were 4x and 5x

$$\frac{4x + 4 + 8}{5x + 4 + 8} = \frac{11}{13}$$

$55x - 52x = 156 - 132$

$3x = 24$

$x = 8$

Sum of the present ages of A and B

$= 4x + 4 + 5x + 4$

$= 9x + 8$

$= 72 + 8$

$= 80$

24. The table shows the production (in thousands) of different types of cars.

Year/Car	2012	2013	2014	2015	2016
A	30	35	48	45	56
B	42	48	40	38	56
C	48	36	38	35	44
D	51	24	30	46	54
E	20	42	40	35	43

The total production of B type cars in the year 2012, 2014, and 2015 has been approximately what percentage more than the total production of A type cars in the year 2013 and 2016?

A. 34.4
B. 33.2
C. 31.9
D. 36.3

Ans. C
Sol.
Production of B type car in 2012, 2014 and 2015 together

$= 42 + 40 + 38 = 120$ thousand

Production of A type car in 2013 and 2016

$= 35 + 56 = 91$ thousand

Required % $= \dfrac{120-91}{91} \times 100 = 31.86 \approx 31.9\%$

25. A truck covers a distance of 384 km at a certain speed. If the speed is reduced by 16 km / h, it will take two hours more to cover the same distance. What is the 75% of the original speed (in km / h)?

A. 54
B. 42
C. 45
D. 48

Ans. D
Sol.
Let the truck at speed v km/h takes t hrs and at speed (v-16) km/h it takes (t+2) hrs. Then,

$$384 \left(\frac{1}{t} - \frac{1}{t+2} \right) = v - (v - 16)$$

$$384 \left(\frac{t+2-t}{t(t+2)} \right) = 16$$

$$24 \times \frac{2}{t(t+2)} = 0$$
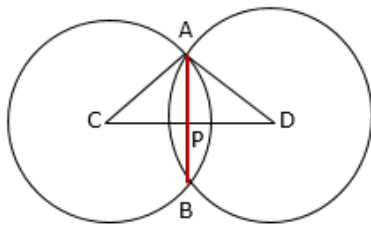
$$t^2 + 2t - 48 = 0$$
$$(t + 8)(t - 6) = 0$$
$$t = 6$$

Original speed $= \dfrac{384}{6} = 64$ km/h

75% of original speed $= 64 \times \dfrac{75}{100} = 48$ km/h

26.Two circles of radii 5 cm and 8 cm intersect at the points A and B . If AB = 8 cm and the distance between the centres of two circles is x cm, then the value of x (to the closest integer) is:

A. 8
B. 10
C. 9
D. 11

Ans. B
Sol.

Here let D and C be the centre of the circle.
And CD be the distance between the centre = x cm
The radius of smaller circle = AC = 5 cm
The radius of larger circle = AD = 8 cm
Also given; AB = 8 cm
So, in Triangle ACP
$AC^2 = AP^2 + CP^2$
$5^2 = (AB/2)^2 + CP^2$
$CP^2 = 25 - 16 = 9$
$CP = 3$
Similarly, in Triangle ADP
$AD^2 = AP^2 + DP^2$
$8^2 = (AB/2)^2 + DP^2$
$DP^2 = 64 - 16 = 48$
$DP = 6.928$
So, CD = 3 + 6.928 = 10 cm

27.If tan x = cot (65° + 9x), then what is the value of x?

A. 2.5°
B. 1.0°
C. 2.0°
D. 1.5°

Ans. A
Sol.
tan x = cot (90° - x)
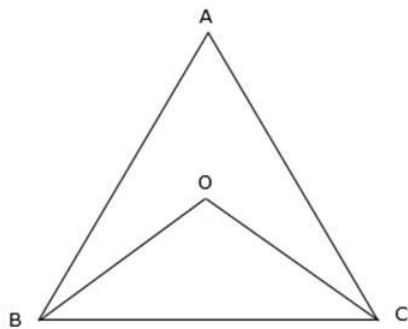cot (90° - x) = cot (65° + 9x)
90° - x = 65° + 9x
25° = 10x
2.5° = x

28.In a ΔABC, the bisectors of $\angle B$ and $\angle C$ meet at point O within the triangle. If $\angle A$ is given, then which among the given options is true?

A. $\angle BOC = 90^\circ + (\angle A / 2)$

B. $\angle BOC = 180^\circ - (\angle A / 2)$

C. $\angle BOC = 90^\circ - (\angle A / 2)$

D. $\angle BOC = 180^\circ - (\angle A)$

Ans. A
Sol.

By angle sum property of triangle:
∠ A + ∠ B + ∠ C = 180°

$\Rightarrow \dfrac{\angle B + \angle C}{2} = 90^\circ - \angle \dfrac{A}{2}$

Now in Δ BOC:

$\dfrac{1}{2} \angle B + \dfrac{1}{2} \angle C + \angle BOC = 180^\circ$

Putting the value from above eq.

$90^\circ - \dfrac{1}{2} \angle A + \angle BOC = 180^\circ$

$\Rightarrow \angle BOC = 180^\circ - 90^\circ + \dfrac{1}{2} \angle A$

$\Rightarrow \angle BOC = 90^\circ + \dfrac{1}{2} \angle A$

29.A man bought 2 articles for Rs. 2650 each. He sold one article at 10% profit and another at 5% profit. The total profit percentage he earned is:
A. 8%
B. 8.5%
C. 7.5%
D. 10%

Ans. C
Sol.
C.P. of each articles = Rs. 2650
10% profit on first article=

10% of 2650 = $\dfrac{10}{100} \times 2650 = 265$

S.P. of first article = 2650 + 265 = Rs. 2915

5% of 2650 = $\dfrac{5}{100} \times 2650 = 132.5$

SP of second article = 2650 + 132.5 = Rs. 2782.5

S.P. of both articles = 2915 + 2782.5 = Rs. 5697.5

Profit percentage = $\dfrac{5697.5 - 5300}{5300} \times 100 = 7.5\%$

30. If $\cos\theta = \dfrac{2p}{p^2+1}$, then sinθ is equal to :

A. $\dfrac{p^2-1}{p^2+1}$

B. $\dfrac{2p}{p^2-1}$

C. $\dfrac{p^2+1}{p^2-1}$

D. $\dfrac{2p}{p^2+1}$

Ans. A

Sol.

We know

Cos θ = $\dfrac{B}{H} = \dfrac{2p}{p^2+1}$

Hence

$P^2 = H^2 - B^2$

$\quad = (p^2+1)^2 - (2p)^2$

$\quad = (p^2-1)^2$

$P = p^2 - 1$

$\Rightarrow \sin\theta = \dfrac{(p^2-1)}{(p^2+1)}$

31. If $(x-7)^3 + (x-8)^3 + (x+6)^3 = 3(x-7)(x-8)(x+6)$, then what is the value of x?

A. 6

B. 8

C. 10

D. 3

Ans. D

Sol.

We know that:

$If\ a^3 + b^3 + c^3 = 3abc$

$then\ (a+b+c) = 0$

$\Rightarrow Here\,[(x-7)+(x-8)+(x+6)]$

$= 3x - 9 = 0$

$\Rightarrow x = 3$

Hence the value of x = 3.

32. 10 years ago, the average age of a family of five members was 38 years. Now, two new members join, whose age difference is 8 years. If the present average age of the family is the same as it was 10 years ago, what is the age (in years) of the younger member?
A. 15
B. 9
C. 10
D. 17

Ans. B
Sol.

Let the age of five people be x_1, x_2, x_3, x_4, x_5

Age 10 years ago = $x_1 - 10, x_2 - 10, x_3 - 10, x_4 - 10, x_5 - 10$
Average:

$$\frac{(x_1 + x_2 + x_3 + x_4 + x_5 - 50)}{5} = 38$$

$$\Rightarrow x_1 + x_2 + x_3 + x_4 + x_5 = 190 + 50 = 240$$

Now since two more people are added whose age difference is 8 years so if
Age of 1st person be x yrs then age of 2nd person = x + 8 yrs
Average:

$$\frac{(x_1 + x_2 + x_3 + x_4 + x_5 + x + x + 8)}{7} = 38$$

$$\Rightarrow x_1 + x_2 + x_3 + x_4 + x_5 = 240$$

$$\Rightarrow \frac{248 + 2x}{7} = 38$$

$$\Rightarrow 248 + 2x = 266$$

$$\Rightarrow x = 9$$

Hence the age of younger member of family = 9 years.

33. The distance between the centres of two circles of radius 2.5 cm each is 13 cm. The length (in cm) of a transverse common tangent is
A. 6
B. 12
C. 8
D. 10

Ans. B
Sol.
Length of transverse tangent :

$$\sqrt{(dis \tan ce \ between \ the \ centres)^2 - (r_1 + r_2)^2}$$

$$= \sqrt{(13)^2 - (2.5 + 2.5)^2}$$

$$= \sqrt{12^2}$$

$$= 12 \, cm$$

34.A dealer buys an article marked at Rs. 30000 with two successive discounts of 20% and 5%. He spends Rs.1200 on repairs and sells it for Rs.30000, what is his profit/loss percent?
A. 25% loss
B. 25% profit
C. 20% profit
D. 20% loss

Ans. B
Sol.
Marked price of the article = Rs 30000
Discounts given = 20 % and 5 %
Net discount =

$$20 + 5 - \frac{20 \times 5}{100}$$

$$= 24\%$$

Amount after 24% discount : $30000 - \frac{24}{100} \times 30000 = Rs\ 22800$
Now, he spends RS 1200 on repairs .
So new amount becomes = 22800 + 1200 = Rs 24000
Selling price of article = Rs 30000

Profit % = $\frac{30000 - 24000}{24000} \times 100 = 25\%$

Hence, he earned a profit of 25%