

1. The average marks of 30 students is calculated as 50. But later it was found that the marks of two students wrongly entered as 25 instead of 28 and as 26 instead of 38. The correct average is

- A. 55
- B. 54
- C. 52.5
- D. 50.5
- E. 51

Answer ||| D

Solution |||

$$\begin{aligned}\text{Required average} &= \{(30 \times 50) - (25 + 26) + (28 + 38)\} / 30 = (1500 - 51 + 66) / 30 \\ &= 1515 / 30 = 50.5\end{aligned}$$

2. The average score of A, B and C is 63. A's score is 15 less than D and 10 more than B's score. If D scored 30 marks more than the average score of A, B and C, then what is the sum of B's and C's scores?

- A. 120
- B. 111
- C. 117
- D. Cannot be determined
- E. None of these

Answer ||| B

Solution ||| Let score of B = x

$$\text{Score of A} = x + 10$$

$$\text{Score of D} = x + 25 = 63 + 30$$

$$\Rightarrow x = 68$$

$$\text{Score of A} = 68 + 10 = 78$$

$$\text{Total score of A, B and C} = 189$$

$$\text{Required Sum (B + C)'s score} = 189 - 78 = 111$$

3. On increasing each of the radius of the base and height of a cylinder by 20%, its volume will be increased by

- A. 20%
- B. 40.8%

C. 60.4%

D. 72.8%

Answer ||| D

Solution |||

Let the original radius and height be 'r' and 'h' respectively.

When both are increased 20%,

New radius,  $r' = r + 20\%$  of r

$$= r + \frac{20}{100}r$$

$$= r + 0.2r = 1.2r$$

Similarly, new height,  $h' = 1.2 h$

We know, Volume of cylinder,  $V = \pi r^2 h$

New Volume of Cylinder,  $V' = \pi r'^2 h'$

$$\Rightarrow V' = \pi(1.2r)^2(1.2) = 1.728\pi r^2 h$$

$$\text{Now, Increase \% in volume} = \frac{\text{Change in volume}}{\text{Original volume}} \times 100$$

$$= \frac{V' - V}{V} \times 100$$

$$= \frac{1.728\pi r^2 h - \pi r^2 h}{\pi r^2 h} \times 100$$

$$= (1.728 - 1) \times 100$$

$$= 72.8\%$$

Hence, Option D is correct.

4. A man lent 38800 at the rate of 5% and 6%. After 3 years he received money at ratio of 4:5. Then find the sum of amount lent at the rate of 5%:

- A. Rs. 21802
- B. Rs. 43603
- C. Rs. 29203
- D. Rs. 35643

Answer ||| A

Solution ||| let the money lent P and (38800-P) at the rate of 5% and 6% respectively.

$$\text{Money received at the rate of 5\%} = P \left( 1 + \frac{5 \times 3}{100} \right) = 1.15P$$

$$\text{Money received at the rate of 6\%} = (38800 - P) \left( 1 + \frac{6 \times 3}{100} \right) = 45784 - 1.18P$$

$$\text{So, } \frac{1.15P}{45784 - 1.18P} = \frac{4}{5}$$

$$4.6P = 228920 - 5.9P$$

$$10.5P = 228920$$

$$P = 21801.90$$

5. A man runs on a square track of 35 m in length with a speed of 9 kmph. What is the total time taken by him to complete a round of the track?

- A. 52 sec
- B. 54 sec
- C. 56 sec
- D. 58 sec

Answer ||| C

Solution ||| The perimeter of the track =  $4 \times 35 = 140 \text{ m}$

Speed of the man =  $9 \text{ kmph} = 2.5 \text{ mps}$

Total time is taken by him to complete around =  $\frac{140}{2.5} = 56 \text{ sec}$

6.1:2:3 is the ratio of speed of Lorry, Bike and Van. If Lorry covers 360 km in 12 hr then what will be the speed of Bike and Van:

- A. 30 kmph and 60 kmph
- B. 45 kmph and 60 kmph
- C. 60 kmph and 90 kmph
- D. 45 kmph and 90 kmph

Answer ||| C

Solution ||| ratio of speed of Lorry, Bike and Van is 1:2:3

If Lorry covers 360 km in 12 hr, then speed of Lorry  $= \frac{360}{12} = 30 \text{ kmph}$

So, the speed of Bike = 60 kmph and the speed of Van = 90 kmph

7. Out of two numbers, 25% of greater number is equal to 45% of the smaller. If the sum of the numbers is 210, then the greater number is

- A. 170
- B. 155
- C. 135
- D. 160

Answer ||| C

Solution |||

Let greater number be x

So, smaller number = 210 - x

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$$(25 * x) / 100 = 45 (210 - x) / 100$$

$$\Rightarrow 5x = 9 \times 210 - 9x$$

$$\Rightarrow 14x = 1890$$

$$\Rightarrow x = 135$$

So, the correct option is C.

8. A's salary is 30% of B's salary and B's salary is 25% of C's salary. What percentage of C's salary is A's salary?

- A. 10%
- B. 9%
- C. 5.5%
- D. 7.5%

Answer ||| D

Solution |||

Let B's salary = Rs. 100

∴ C's salary = Rs. 400

And A's salary = Rs. 30

$$\text{required percentage} = \frac{30}{400} \times 100 = \frac{30}{4} = 7.5\%$$

Option D is correct.

9. 2 years hence Age ratio between A & B will be 3 : 4. If 8 years ago, the age ratio of A & B was 2 : 3, find the present age of A

- A. 28 year
- B. 30 year
- C. 38 year
- D. 34 year
- E. None of these

Answer ||| A

Solution |||

Let the age of A and B two years hence will be  $3x$  years and  $4x$  years respectively.

8 years ago, age of A =  $(3x - 10)$  years

8 years ago, age of B =  $(4x - 10)$  years

According to question,

$$\frac{3x - 10}{4x - 10} = \frac{2}{3}$$

$$\Rightarrow 9x - 30 = 8x - 20$$

$$\Rightarrow x = 10$$

Present age of A =  $3x - 2 = 3 \times 10 - 2 = 28$  years

10. A car travels from A to B at the rate of 45 kmph and returns from B to A at the rate of 75 kmph. Its average speed during the whole journey is

- A. 61.75 kmph
- B. 45.5 kmph
- C. 50 kmph
- D. 56.25 kmph

Answer ||| D

Solution |||

$$\text{Average speed of whole journey} = \left( \frac{2xy}{x + y} \right) \text{ kmph}$$

$$\frac{2 \times 45 \times 75}{120} = \frac{6750}{120} = 56.25 \text{ kmph}$$

Option D is correct.

11. Daily local train ticket costs Rs 30 and Monthly Pass costs Rs 670.8. If I buy the Monthly Pass and travel for 26 days in a month than I save?

- A. 12 percent
- B. 14 percent
- C. 25 percent
- D. 10 percent

Answer ||| B

Solution ||| Ticket cost = 30 rupees daily  
Fare for 26 days =  $26 \times 30 = 780$  rupees

Monthly pass costs = 670.8 rupees

Saving =  $780 - 670.8 = 109.2$  rupees

$$\text{Saving \%} = \frac{109.2}{780} (100)$$

= 14%

12. The proportion among three numbers is 3 : 4 : 5 and their LCM is 1800. The second number is:

- A. 90
- B. 120
- C. 30
- D. 150

Answer ||| B

Solution |||

Let the numbers be  $3x$ ,  $4x$  and  $5x$ .

Then, their L.C.M. =  $60x$ .

So,  $60x = 1800$  or  $x = 30$ .

The numbers are  $(3 \times 30)$ ,  $(4 \times 30)$  and  $(5 \times 30)$ .

Hence, required number = 120.

13. Four bells ring together at a fixed time. After that, they ring at intervals of 6, 8, 10 and 12 sec respectively. After how many minutes, will they ring together again?

- A. 1 min
- B.  $1\frac{1}{2}$  min
- C.  $2\frac{1}{4}$  min
- D. 2 min

Answer ||| D

Solution |||

The Bells will ring together after a time equal to the LCM of all 4 bells ringing duration.

So, the Required time = LCM (6, 8, 10, 12)

= 120 sec. = 2 min.

14. A man buys 2 apples and 3 kiwi fruits for Rs. 37. If he buys 4 apples and 5 kiwi fruits for Rs. 67, then what will be the total cost of 1 apple and 1 kiwi fruit?

- A. Rs. 18
- B. Rs. 20
- C. Rs. 15
- D. Rs. 28

Answer ||| C

Solution |||

Let cost price of one apple =  $x$

Cost price of one kiwi =  $y$

Now, A man buys 2 apples and 3 kiwi fruits for Rs. 37.

$$\Rightarrow 2x + 3y = \text{Rs. } 37 \dots\dots\dots(1)$$

Also, he buys 4 apples and 5 kiwi fruits for Rs. 67

$$\Rightarrow 4x + 5y = \text{Rs. } 67 \dots\dots\dots(2)$$

Multiply equation (1) by 2 and subtract it from (2)

$$\Rightarrow -y = -7$$

$$\Rightarrow y = 7$$

Put the value of  $y$  in (1)

$$\Rightarrow x = 8$$

Total cost of 1 apple and 1 kiwi fruit =  $x + y = \text{Rs. } 7 + \text{Rs. } 8 = \text{Rs. } 15$

15. Akhilesh starts a business with Rs 6,000 and after 3 months, Bunty also joins with some capital. After a year, the profit is divided between them in the ratio 2 : 1. How much did Bunty invested?



- A. Rs 6400
- B. Rs 5600
- C. Rs 4200
- D. Rs 4000
- E. Rs 6000

Answer ||| D

Solution |||

Let Bunty investment be Rs.  $x$ ,

then ratio of their profits

$$6000 \times 12 : x \times 9 = 2 : 1$$

$$\text{So, } 8,000/x = 2/1$$

$$x = 4000$$