

Year	Questions	Marks
2012	10	10
2013	10	10
2014	10	10
2015	10	10
2016	10	10
Total	50	50

1. The population of a town was 160000 three years ago. If it had increased by 3%, 2.5% and 5% in the last three years, find its present population.

- (A) 167366 (B) 177466 (C) 177366 (D) 177365

Answer: C

Solution: Given population are 160000

It has increased by 3%, 2.5% and 5% in the last three years

Hence the total population after 3 years is

$$160000 \times \left(1 + \frac{3}{100}\right) \times \left(1 + \frac{2.5}{100}\right) \times \left(1 + \frac{5}{100}\right) = 177366$$

[2012]

2. The sides of a quadrangular field, taken in order are 26 m, 27 m, 7 m and 24 m respectively. The angle contained by the last two sides is a right angle. Find its area.

- (A) 324 m² (B) 238.59 m² (C) 375.84 m² (D) 384.69 m²

Answer: D

Solution: If the base of the quadrilateral is 24m and breadth is 7m

Area of a rectangular part of the quadrilateral = l × b = 24 × 7 = 168 sq.m

Area of a triangular part of the quadrilateral = $\frac{1}{2} \times b \times h = \frac{1}{2} \times 24 \times 19 = 228$ sq. m

Total area approximately = 384.69 sq.m

[2013]

3. An alone can complete a work in 16 days and B alone in 12 days. Starting with A, they work on alternate days. The total work will be completed in _____.

- (A) 12 days (B) 13 days (C) $13\frac{5}{7}$ days (D) $13\frac{3}{4}$ days

Answer: D

Solution: One day work of A + one day work by B = $\frac{1}{16} + \frac{1}{12} = \frac{14}{96} = \frac{7}{48}$

As they are doing work on alternate days, so work to be completed in $\frac{96}{7} = 13 + \frac{5}{7}$ & gt; 13 days

This shows that for 12 days they will work on alternate ways. Then A will work for 1 day and then B will for $\frac{3}{4}$ days to Finish $\frac{1}{16}$ parts left after 13 days.

So, total number of days = $12 + 1 + \frac{3}{4} = 13\frac{3}{4}$

[2014]

4. A triangular park in a city has dimensions 100 m × 90 m × 110 m. A contract is given to a company for planning grass in the park at the rate of ₹4,000 per hectare. Find the amount to be paid to the company.

(Take $\sqrt{2} = 1.414$)

- (A) ₹ 4532.90 (B) ₹4242 (C) ₹1696.80 (D) ₹1000

Answer: C

[2015]

5. Eight people are planning to share equally the cost of a rental car. If one person withdraws from the arrangement and the others share equally the entire rental of the car, then the share of each of the remaining persons is increased by _____ of the original share.

- (A) $\frac{1}{9}$ (B) $\frac{1}{8}$ (C) $\frac{1}{7}$ (D) $\frac{7}{8}$

Answer: C

Solution: Say suppose if the cost of the car is Rs 1 and then each one would get 1/8 eight, Now one of them withdraws then it is increased by 1/7th of original share.

[2016]

6. The taxi charges in a city comprise of a fixed charge, together with the charge of the distance covered. For a journey of 16 km, the charges paid are Rs.156 and for a journey of 24 km, the charges paid are Rs.204. What will a person have to pay for travelling a distance of 30 km?

- (A) Rs.236 (B) Rs.240 (C) Rs.248 (D) Rs.252

Answer: B

Solution: Let the fixed charge be Rs x and the distance per km is Rs y

So, $x + 16y = 156$ ----- (1)

And $x + 24y = 204$ ----- (2)

Solving (1) and (2), we get $x = \text{Rs } 60$ and $y = \text{Rs } 6$

So, for 30 km the amount = $60 + 30 \times 6 = \text{Rs } 240$

[2012]

7. The taxi fare in a city is 25 for first kilometer and 10.5 for next each subsequent kilometer. A traveler is charged 109 as the fare. How many kilometers did he travel?

- (A) 8 km (B) 9 km (C) 10 km (D) None of these

Answer: B

Solution: In 1 km the amount charges by the taxi =Rs.25

Total fare paid by the traveler = Rs.109

Remaining subsequent charges of distances covered by the taxi = $109 - 25 = \text{Rs.}84$

$84/10.5 = 8 + 1(\text{Distance covered in first one km}) = 9 \text{ Km}$

[2013]

8. A sum of ₹ 1550 is lent out into two parts, one at 8% and another one at 6%. If the total annual income is ₹ 106, then find the money lent at each rate.

- (A) ₹750, ₹800 (B) ₹600, ₹950 (C) ₹650, ₹900 (D) ₹850, ₹750

Answer: C

Solution: According to the question

$8x/100 + (1550 - x) \times 6/100 = 106$

This gives

$2x = 10600 - 9300$

$x = 1300/2 = \text{Rs}650.$

[2014]

9. Reema bought x pens at ₹2.60 each and y greeting cards at 80 paise each. If the pens cost ₹12 more than the cards, then the given condition is represented by the equation _____.

- (A) $13x - 4y = 6$ (B) $13x - 4y = 60$ (C) $260x - 8y = 100$ (D) $260x - 8y = 12$

Answer: B

Solution: Total pens = $x \times 2 \times 60 = 2.6x$
 Total greeting cards = $Y \times 0.8 = 0.8Y$
 $2.6x = 0.8y + 12$ upon solving we get $2(1.3x - 0.4y) = 6$
 If we multiply both sides by 10 we get $13x - 4y = 60$.

[2015]

10. The cost price of an article A is ₹160 and selling price of another article B is ₹ 240. If the selling price of A will be equal to the cost price of B, then the profit after selling A is 20%. What is the profit on B?
 (A) 16.66% (B) 50% (C) 25% (D) None of these

Answer: C

Solution: Profit on B = 25%

[2016]

11. Savita has Rs.27 in the form of fifty paise and twenty-five paise coins. She has twice as many twenty-five paise coins as she has 50 paise coins. How many coins of each kind does she have?
 (A) 27, 54 (B) 30, 60 (C) 25, 50 (D) 40, 80

Answer: A

Solution: Let the number of 50p coins be 'x'
 Then, the number of 25p coins = $2x$
 Hence the total valuation is $\left(\frac{1}{2}\right)x + \left(\frac{1}{4}\right)2x = 27$

OR,

$X = 27;$ (50p coins)

$2x = 54;$ (25p coins)

[2012]

12. Four runners started running the race in the same direction around a circular path of 7 km. Their speeds are 4 km/hr., 3 km/hr., and 9 km/h. r and 3.5 km/hr. individually. If they have started their race at 6 o' clock in the morning, then at what time they will be at the starting point?
 (A) 14 hours (B) 13 hours (C) 10 hours (D) 15 hours

Answer: A

Solution: First we will find the time to be taken to complete one lap for each.

For 1st,

The time taken to complete one lap = $60 \times 7 \times 60/4 = 6300$ seconds

For 2nd,

The time taken to complete one lap = $60 \times 7 \times 60/3 = 8400$ seconds

For 3rd,

The time taken to complete one lap = $60 \times 7 \times 60/9 = 2800$ seconds

For 4th,

The time taken to complete one lap = $60 \times 7 \times 60/3.5 = 7200$ seconds

Now, LCM of these (6300, 8400, 2800, 7200) = 50400 Seconds = 14 hours

[2013]

13. If 6 years are subtracted from the present age of Gagan and the remainder is divided by 18, then the present age of his grandson Anup is obtained If Anup is 2 years younger to Madan whose age is 5 years, then what is Gagan's present age?
 (A) 48 years (B) 60 years (C) 84 years (D) 96 years

Answer: B

Solution: Let the present age of Gagan is x years.

According to the question

$$(x - 6) / 18 = 5 - 2$$

$$\text{So, } x - 6 = 54$$

$$\text{i.e., } x = 60 \text{ years}$$

[2014]

14. A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price and the printed price of the book are

(A) 45:56 (B) 50:61 (C) 99:125 (D) None of these

Answer: A

Solution: Let the CP be 100

$$\text{Hence SP} = 100 + 12\% \text{ of } 100 = 112$$

If the marked price be X, then 90% of X = 112

$$X = \text{Rs. then the required ratio} = 100 : 112 = 900 : 1120 = 45 : 56.$$

[2015]

15. Twenty women can do a work in sixteen days. Sixteen men can complete the same work in fifteen days. What is the ratio between the capacity of a man and a woman?

(A) 3:4 (B) 3:5 (C) 5:3 (D) None of these

Answer: D

Solution: 20:15 = 4:3

[2016]

16. A trader purchases 70 kg of tea at Rs.15 per kg and 30 kg of tea at Rs.18.50 per kg. If the packing charges are 2 percent, then at what price he must sell the mixture of two to gain 15%?

(A) Rs.18.82 per kg (B) Rs.18 per kg (C) Rs.18.50 per kg (D) Rs.17.80 per kg

Answer: A

$$\text{Solution: Total price of procurement} = 70 \times 15 + 30 \times 18.50 = 1050 + 555 = 1605$$

$$\text{Including packing charge of } 2\%, \text{ CP} = 1605 \times \left(\frac{51}{50}\right) = 1637.10$$

$$\text{Total weight of Tea} = 70 + 30 = 100\text{kg}$$

Expected profit = 15%

$$\text{Therefore, SP} = 1637.10 \times \left(\frac{23}{20}\right) \times \frac{1}{100} = 18.87$$

[2012]

17. A bookseller procures 40 books for 3200 and sells them at a profit equal to the selling price of 8 books. What is the selling price of one dozen books, if the price of each book is same?

(A) 720 (B) 960 (C) 1200 (D) 1440

Answer: C

$$\text{Solution: CP of 40 books} = \text{Rs.}3200$$

$$\text{CP of one book} = 3200/40 = \text{Rs.}80$$

$$\text{SP of one book} = 3200/8 = \text{Rs.}400$$

$$\text{CP of one dozen books} = 12 \times 400 = \text{Rs.}4800$$

$$\text{SP of one dozen books} = 4800 - (3200 + 400) = \text{Rs.}1200$$

[2013]

18. A certain factory employed 600 men and 400 women and the average wage was ₹ 25.50 per day. If a woman got ₹ 5 less than a man, then what is the daily wage of a man and woman respectively?
 (A) ₹25: ₹20 (B) ₹27.50: ₹22.50 (C) ₹30: ₹ 25 (D) ₹32.50: ₹27.50

Answer: B

Solution: Let us suppose the daily wage of a woman = Rs x

So, daily wage of a man is Rs x + 5

According to question

$$\{600(x + 5) + 400x\}/1000 = 2550$$

This give x = Rs 22.50

So, daily wage of a woman = Rs 22.5 and daily wage of a man = Rs 27.5

[2014]

19. Ajay has certain amount in his account. He gives half of it to his eldest son and one third of the remaining to his youngest son. What fraction of the original amount is left with him now?
 (A) 1/3 (B) 2/3 (C) 3/4 (D) 1/6

Answer: A

Solution: Let the Ajay has certain amount in his account = x

Eldest son gets = Youngest son gets = $\frac{1}{3}(X -) = \frac{1}{3}() =$

Amount left with him now = x - - =

The fraction of original amount left with him now =

[2015]

20. Average age of 6 sons of a family is 8 years. Average age of the sons together with their parents is 22 years. If the father is older than the mother by 8 years, then the age of the mother is
 (A) 44 years (B) 52 years (C) 60 years (D) 68 years

Answer: D

Solution: Total Age of Sons = $6 \times 8 = 48$

Total Age of Sons & Parents = $22 \times 8 = 176$

Total Age of parents = $176 - 48 = 128$

Since father is older than the mother by 8 years, mother's age = $(128 - 8)/2 = 120/2 = 60$

Father's age is 68

Mother's age is 60

[2016]

21. The average age of a family of 6 members 4 years ago was 25 years. Meanwhile a child was born in this family and still the average age of the whole family is same today. The present age of child is _____.
 (A) 2 years (B) 1 1/2 years (C) 1 year (D) Data insufficient

Answer: C

Solution: Total present age of 6 persons excluding child = $150 + 24 = 174$ years

Let the age of the child be x years

According to question

$$(174 + x)/7 = 25$$

So, x = 1 year

[2012]

22. The population of a city had increased successively at the rate of 6%, 4% and 2% per annum during last three years. If its present population is 1124448, then what was its population three years ago?
 (A) 1000000 (B) 1050000 (C) 1080000 (D) 1100000

Answer: D

Solution: Let the population three years ago was x .

According to question $x \times 106/100 \times 104/100 \times 102/100 = 1124448$

So, $x = 1100000$

[2013]

23. A man earns ₹20 on the first day and spends ₹15 on the next day. He again earns ₹20 on the third day and spends ₹15 on the fourth day. If he continues to save like this, then how soon will he have ₹60 in hand?
 (A) On 17th day (B) On 27th day (C) On 30th day (D) On 24th day

Answer: A

Solution: The last day earning = Rs 20

So, the earning required before last day = $60 - 20 = \text{Rs } 40$

Now, $40/5 = 8$

So, total number of days = $8 \times 2 + 1 = 17\text{th days}$

[2014]

24. In a call Centre at New Delhi, it is observed that it gets a call at an interval of every 10 minutes from California, at an interval of every 12 minutes from Texas, at an interval of 20 minutes from Washington DC and after every 25 minutes it gets a call from London. If in the early morning at 5:00 a.m. it has received the calls simultaneously from all the four destinations, then at what time again it will receive the calls at a time from all the places on the same day?
 (A) 10:00 a.m. (B) 3:00 a.m. (C) 5:00 p.m. (D) Both A and B

Answer: A

Solution: Average time difference between New Delhi and the rest of the countries is around 5hrs. So it will receive call again from all the four places in the same day are 10:00 a.m.

[2015]

25. A train travelling at 48 km/hr. completely crosses another train having half its length and travelling in opposite direction at 42 km/hr. in 12 seconds. It also passes a railway platform in 45 seconds. The length of the platform is _____.
 (A) 400m (B) 450m (C) 560m (D) 600m

Answer: A

Solution: Let the length of the train traveling at 48 kmph be $2x$ meters.

And length of the platform is y meters.

Relative speed of train = $(48+42)\text{kmph}$

= $(90 \times 5/18) = 25 \text{ m/sec}$; and $48 \text{ kmph} = 48 \times 5/18 = 40/3 \text{ m/sec}$.

According to the question, $(2x + x)/25 = 12$; or, $3x = 12 \times 25 = 300$; or, $x = 300/3 = 100\text{m}$

Then, length of the train = $2x = 100 \times 2 = 200\text{m}$.

$200 + y / (40/3) = 45$;

$600 + 3y = 40 \times 45$; or, $3y = 1800 - 600 = 1200$; or, $y = 1200/3 = 400 \text{ m}$.

Length of the platform = 400 m

[2016]

26. 2 men and 3 women finish 25% of the work in 1 day, while 6 men and 14 women can finish the whole work in 5 days. In how many days will 20 women finish it?
 (A) 20 (B) 25 (C) 24 (D) None of these

Answer: B
Solution: Bonus

[2012]

27. The length of longest pole that can be placed on the floor of a room is 12 m and the length of longest pole that can be placed in the room is 15 m. The height of the room is
 (A) 3 m (B) 6 m (C) 9 m (D) 4 m

Answer: C
Solution: Let the height of the room be x
 By Pythagoras theorem
 $x^2 = (15)^2 - (12)^2$
 $x = 9$ m
 Thus the height of the room is 9 m

[2013]

28. The price of rice is reduced by 2% per kg. How many kilograms of rice can now be bought for the money which was sufficient to buy 49 kg of rice earlier?
 (A) 48 kg (B) 49 kg (C) 50 kg (D) 51 kg

Answer: C
Solution: Let the initial price is Rs 100
 New price = $100 - 2 = 98$
 As in Rs 98 one can buy 49 kg
 So, in Rs 100 one can buy = $(49/98) \times 100 = 50$ kg

[2014]

29. M and N alone can do a work in 21 and 42 days respectively. In how many days they can complete the work, if they work on alternate days?
 (A) 14 (B) 28 (C) 42 (D) 35

Answer: B
Solution: M's one day work =
 N's one day work =
 (M+N)'s 2 day's work = = =
 We can see that $14 \times =$
 M+N work for 14 days in pair of days that means for 28days
 M & N can complete the work, if they work on alternate days = 28 days.

[2015]

30. A well with 10 m inside diameter is dug 14 m deep. Earth taken out of it is spread all around to a width of 5m to form an embankment. The height of the embankment is _____.
 (A) 2.46m (B) 3.56m (C) 4.66m (D) 5.76m

Answer: C
Solution: Radius of the well = 5 m

Height of the well = 14m
 Width of embankment = 5 m
 Radius of embankment = 5 + 5 = 10 m
 Let h be the height of the embankment
 So vol of the embankment = vol of the well
 $\pi (10^2 - 5^2) \times h = \pi \times 5^2 \times 14$
 $\pi \times 75 \times h = \pi \times 25 \times 14$
 $h = \frac{\pi \times 25 \times 14}{75 \times \pi}$
 $h = 4.66\text{m}$

[2016]

31. Two pipes X and Y can fill a cistern in 24 min. and 32 min. respectively. If both the pipes are opened together, then after how much time Y should be closed so that the tank is full in 18 minutes?
 (A) 6 mins (B) 8 mins (C) 10 mins (D) None of these

Answer: B

Solution: X can fill it in 24 min
 So, in 18 minute X will fill = $18/24 = 3/4$
 i.e., y should fill = $1/4$
 Time for y = $1/4 \times 32 = 8$ min

[2012]

32. A and B can do a piece of work in 10 days; B and C in 12 days; A, B and C in 8 days. In how many days A and C together can do the same work?
 (A) 8 (B) 15 (C) 20 (D) can't be determined

Answer: B

Solution: In one day work done by A, B, C = $1/8$
 Work done by A and B = $1/10$
 Work done by B and C = $1/12$
 Work done by A in one day = $1/8 - 1/12 = 1/24$
 Work done by C in one day = $1/8 - 1/10 = 1/40$
 Work done by A and C in one day = $1/24 + 1/40 = 1/15$
 Thus the entire work done by A and C will be 15 days.

[2013]

33. In a bag, there are coins of 25 paise, 10 paise and 5 paise in the ratio of 1:2:3. If there are ₹30 in all, then how many 5 paise coins are there?
 (A) 50 (B) 100 (C) 150 (D) 200

Answer: C

Solution: Let us suppose the number of coins of 25 paise = x
 Number of coins of 10 paise = 2x
 And number of coins of 5 paise = 3x
 So, $25x + 10(2x) + 5(3x) = 3000$ or $x = 50$
 So, $3x = 150$.

[2014]

34. 75 kg of wheat is being consumed in 30 days by 24 persons. How many persons will consume 50 kg of wheat in 40 days?
 (A) 10 (B) 12 (C) 15 (D) 18

Answer: B

Solution: 75 kg of wheat is being consumed 30 days by 24 persons.

So, 75 kg of wheat is being consumed 1 day by 30×24 persons

1kg of wheat being consumed in 1days by $30 \times 24 / 75 = 2 \times 24 / 5$ persons

1kg of wheat being consumed in 40 days by $2 \times 24 / 5 \times 40 = 24 / 5 \times 20 = 6 / 5 \times 5$ persons

50 kg of wheat being consumed in 40 days by $6 \times 50 / 5 \times 5 = 6 \times 2 = 12$ persons.

[2015]

35. In a mixture of 60 liters, the ratio of milk and water is 2:1. If this ratio is to be 1:2, then the quantity of water to be further added is _____.
 (A) 20 liters (B) 40 liters (C) 40 liters (D) 60 liters

Answer: D

Solution: Quantity of Milk = $60 \times (2/3) = 40$ liters

Quantity of water = $60 - 40 = 20$ liters

As per question we need to add water to get quantity 2:1

$$\Rightarrow 40 / (20+x) = 1/2$$

$$\Rightarrow 20 + x = 80$$

$$\Rightarrow x = 60 \text{ liters}$$

[2016]

36. Suresh travelled 1200 km by air which formed $(2/5)$ of his trip. One third of the whole trip, he travelled by car and the rest of the journey he performed by train. Find the distance travelled by train. Also, find the speed of the train if the time taken for the train to travel the whole distance is 8hrs.
 (A) 1600 km, 350 km/hr. (B) 800 km, 375 km/hr.
 (C) 1800 km, 300 km/hr. (D) 480 km, 380 km/hr.

Answer: B

Solution: $2/5$ of total travel = 1200

So, total distance travelled = 3000

Now = $3000 - 1200 - 1000 = 800$ km travelled by car.

[2012]

37. There are four bells. They ring after every one minute, two and half minutes, 50 seconds and 5 seconds respectively. If all the four bells rang last time together at 8:20 p.m., then at what time will they all next ring simultaneously?
 (A) 8:23 p.m. (B) 8:24 p.m. (C) 8:25 p.m. (D) 8:26 p.m.

Answer: C

Solution: The HCF of 60 seconds, 150 seconds, 50 seconds, 5 seconds is 300 seconds.

That is HCF = $300/60 = 5$ minutes

So, the bells will ring together at = 8:25 pm (8:20 + 00:05)

[2013]

38. A man, a woman and a boy can complete a job in 3, 4 and 12 days respectively. How many boys must assist 1 man and 1 woman to complete the job in $\frac{1}{4}$ of a day?
 (A) 1 (B) 4 (C) 19 (D) 41

Answer: D

Solution: One day work for a

Man = $\frac{1}{3}$

Woman = $\frac{1}{4}$

Boy = $\frac{1}{12}$

Now, one man and one woman work in $\frac{1}{4}$ days = $\frac{1}{12} + \frac{1}{16} = \frac{7}{48}$

That is $1 - \frac{7}{48} = \frac{41}{48}$ parts of work should be done by the assisting boys.

$\frac{1}{12} \times \frac{1}{4}$ (number of boys) = $\frac{41}{48}$

So, 41 boys required.

[2014]

39. A car travelling with $\frac{5}{7}$ of its usual speed covers 42 km in 1 hour 40 mins 48 secs. What is the usual speed of the car?
 (A) $17\frac{6}{7}$ km/hr. (B) 25 km/hr. (C) 30 km/hr. (D) 37.5 km/hr.

Answer: D

Solution: Let usual speed of car = x

Speed = Distance/time

$5x/7 = 45/1\text{hr } 40\text{min } 48\text{sec}$

$5x/7 = 45/1+40/60+48/3600$

$5x/7 = 45/3600+2400+48/3600$

$5x/7 = 45/6048/3600$

$5x/7 = 45 \times 3600/6048$

X = 37.5 km/hr.

[2015]

40. The fluid contained in a bucket can fill four large bottles or seven small bottles. A full large bottle is used to fill an empty small bottle. What fraction of the fluid is left over in the large bottle when the small one is full?
 (A) $\frac{2}{7}$ (B) $\frac{3}{7}$ (C) $\frac{4}{7}$ (D) $\frac{5}{7}$

Answer: B

Solution: Let the capacity of the bucket be x liters. Then,

Capacity of 1 large bottle = $\frac{x}{4}$; Capacity of 1 small bottle = $\frac{x}{7}$

Fluid left in large bottle = $\left(\frac{x}{4} - \frac{x}{7}\right) = \frac{3x}{28}$

\therefore required fraction = $\left(\frac{\frac{3x}{28}}{\frac{x}{4}}\right) = \left(\frac{3x}{28} \times \frac{4}{x}\right) = \frac{3}{7}$

[2016]

41. Three lightships flash simultaneously at 6:00 a.m. The first lightship flashes every 12 seconds, the second lightship every 30 seconds and the third lightship every 66 seconds. At what time will the three lightships next flash together?
 (A) 6:09 a.m. (B) 6:10 a.m. (C) 6:11 a.m. (D) 6:12 a.m.

Answer: C

Solution: Since, LCM of 12, 30 and 66 is 660,
Hence, all the three lightships will flash together after 660 seconds.
Since, 60 seconds = 1 minute
Therefore, 660 seconds = 11 minutes
So, the time would be 6.11 am

[2012]

42. The dimensions of a photograph are 4 cm and 1.8cms. If the breadth of the enlarged photo is 4.5 cm and it was enlarged proportionally then what is the new length of new photograph?
(A) 6 cm (B) 5.4 cm (C) 10 cm (D) 9 cm

Answer: C

Solution: Length of the enlarge photograph = $(4.5/1.8) \times 4 = 10$ cm

[2013]

43. The average age of 15 students of a class is 15 years. Out of these, the average age of 5 students is 14 years and that of the other 9 students is 16 years. The age of the 15th student is _____.
(A) 11 years (B) 14 years (C) 15 years (D) $15\frac{2}{7}$ years

Answer: A

Solution: The age of 15th student = $15 \times 15 - 5 \times 14 - 9 \times 16 = 225 - 70 - 144 = 11$ years

[2014]

44. Roma took a loan of ₹ 16,000 against her insurance policy at the rate of $12\frac{1}{2}\%$ per annum. Calculate the total compound interest that will be paid by Roma after 3 years.
(A) ₹ 6781.25 (B) ₹6925.30 (C) ₹4296.82 (D) ₹3579.71

Answer: A

[2015]

45. A money lender borrows money at 4% p. A and pays interest at the end of the year. He lends it at 6% P A compounded half-yearly and receives the interest at the end of the year. Thus, he gains ₹104.50 a year. The amount of money he borrows, is
(A) ₹4500 (B) ₹5000 (C) ₹5500 (D) ₹6000

Answer: B

Solution: Let he borrowed Rs x
Using formula of CI & SI we get,

$$\text{Amount he has to return} = \frac{104}{100}x$$

$$\text{Amount he will get} = \left(1 + \frac{3}{100}\right)^2 = \frac{10609}{10000}x$$

$$\text{His gain} = \frac{10609}{10000}x - \frac{104}{100}x = 104.50$$

Solving above equation, we get x = Rs.5000

[2016]

46. A fruit seller has 24 kg of apples. He sells a part of these at a gain of 20% and the balance at a loss of 5%. If on the whole he earns a profit of 10%, the amount of apples sold at a loss is _____.
(A) 4.6 kg (B) 6 kg (C) 9.6 kg (D) 11.4 kg

Answer: C

Solution: Let the amount of apples to sell at gain is y kg.

According to question

$$120y/100 + (24 - y) \times 95/100 = 24 \times 110/100$$

$$\text{So, } y = 14.4 \text{ kg}$$

That is 14.4 kg

$$\text{So, the amount sold at loss} = 24 - 14.4 = 9.6 \text{ kg}$$

[2012]

47. The price of a car depreciates in the first year by 25%, in the second year by 20%, in the third year by 15% and so on. The final price of the car after 3 years, if the present cost of the car is 10,00,000 is
 (A) 7,80,000 (B) 5,10,000 (C) 6,90,000 (D) 1,70,000

Answer: B

$$\text{Solution: } = 10,00,000 \times [(1 - 25/100) \times (1 - 20/100) \times (1 - 15/100)]$$

$$= 10,00,000 \times [75/100 \times 80/100 \times 85/100]$$

$$= 10,00,000 \times 75/100 \times 80/100 \times 85/100$$

$$= 75 \times 80 \times 85$$

$$= \text{Rs.} 5,10,000$$

[2013]

48. Village X has a population of 68000, which is decreasing at the rate of 1200 per year. Village Y has a population of 42000, which is increasing at the rate of 800 per year. In how many years will the population of the two villages be equal?
 (A) 12 (B) 13 (C) 14 (D) 15

Answer: B

Solution: Let us suppose in 'n' years population will be equal.

$$68000 - 1200 n = 42000 + 800n$$

$$\text{So, } 2000 n = 26000 \text{ or } n = 13$$

[2014]

49. Cubical boxes of volume 15625 cm^3 each are put in a cubical store of side 2.5 m.
 (i) How many such boxes can be put in the store?
 (ii) What are the dimensions of the box?

	(i)	(ii)
(A)	1250	15 cm
(B)	1000	15 cm
(C)	1250	25 cm
(D)	1000	25 cm

Answer: D

$$\text{Solution: (i) } V = 15625 \text{ cm}^3$$

$$\text{Side} = 2.5 \text{ m} = 2.5 \times 100 \text{ cm} = 250 \text{ cm}$$

$$\text{Volume of cubical store} = \text{side}^3 = (250)^3 = 15625000 \text{ cm}^3$$

$$\text{Number of boxes store contain} = = = 1000 \text{ cm}^3$$

$$\text{(ii) Dimensions of the box} = 15625 \text{ cm}^3$$

$$\text{Side}^3 = 15625 \text{ cm}^3 \text{ upon solving we get}$$

$$\text{Side} = 25 \text{ cm.}$$

[2015]

50. After spending 40% in machinery, 25% in building, 15% in raw material and 5% on furniture, Harilal had a balance of ₹ 52200. The money with him was _____.
- (A) ₹260000 (B) ₹289000 (C) ₹348000 (D) ₹556000

Answer: C

Solution: Let the total money with industry owner was Rs x

$[100-(40+25+15+5)]\%$ of x = 52200

15% of x = 52200

$X = (5220000/15)$

X = 348000

The total money with industry owner was Rs 348000.

[2016]