

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

1. A jar is $\frac{3}{5}$ full orange juice. This amount is equal to 6 full glasses.

When 1 full glass is drunk, what fraction of the jar is still left with orange juice?

[2012]

- (A) $\frac{1}{10}$ (B) $\frac{1}{6}$ (C) $\frac{2}{5}$ (D) $\frac{1}{2}$

Ans: D

Solution: Let the capacity of each glass be 100 ml

6 full glasses = 600 ml

The given jar is $\frac{3}{5}$ full = 6 full glasses = 600 ml

Hence, capacity of Jar = $\frac{5}{3} \times 600$ ml = 1000ml

When 1 glass is drunk, remaining quantity in Jar = 600 – 100 ml = 500 ml

500 ml is $\frac{1}{2}$ of 1000 ml

2. By selling a watch for ₹ 1275, Javed lost 15%. At what price should he sell to make profit of 10%?

[2013]

- (A) ₹ 1500 (B) ₹ 1482 (C) ₹ 1550 (D) ₹ 1650

Ans: D

3. A 5 kg bag of rice cost ₹ 8 per kg. Mr. Mohit bought ₹ 120 worth of rice.

Into smaller packets each weighing $\frac{3}{5}$ kg, how many packets would he get?

[2014]

- (A) 15 (B) 12 (C) 9 (D) 25

Ans: D

Solution: Cost of 1kg rice = Rs.8

Cost of 1 packet of 5 kg rice = Rs. (8 × 5) = Rs.40

Total money = Rs.120

No.of packets of 5kg rice bought from Rs.120 = 120/40 = 3

So, total quantity of rice bought = 5 × 3 = 15kg

Now, weight of each new packet of rice = $\frac{3}{5}$ kg

Number of packets = 15 ÷ $\frac{3}{5}$ = 15 × $\frac{5}{3}$ = 25

4. At Shimla, the temperature was -7°C on Tuesday. It then dipped by 3°C on Wednesday, On Thursday, it rose by 6°C. What was the temperature of Shimla on Wednesday and Thursday respectively?

[2015]

- (A) -4°C, -10°C (B) -10°C, -4°C (C) -12°C, 8°C (D) -10°C, 4°C

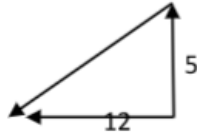
Ans: B

5. A tree is broken at a height of 5 m from the ground and its top touches the ground at a distance of 12 m from the base of the tree. Find the original height of the tree. [2016]

(A) 10 m (B) 15 m (C) 13 m (D) 18 m

Ans: D

Solution:



$$\text{Length of broken part} = (12^2 + 5^2)^{1/2} = 13$$

$$\text{Original height of tree} = 13 + 5 = 18 \text{ m}$$

6. Monika mixed orange syrup and water in the ratio 4 : 9.

How many litres of orange syrup were required to mix with 324 L of water? [2012]

(A) 36 L (B) 144 L (C) 167 L (D) 198 L

Ans: B

Solution: Given that orange and water are mixed in the ratio of 4:9

$$\text{Hence, fraction of Water} = \frac{9}{13}$$

$$\text{Given Quantity of mixture} = \frac{13}{9} \times 324 = 468 \text{ L}$$

$$\text{Therefore, quantity of Orange available} = 468 - 324 = 144 \text{ L}$$

7. A businessman borrowed some money at 1% per month. After some time he settled the debt by paying ₹14,750. If the total interest was ₹ 2950, find the time. [2013]

(A) 2 years 1 month (B) 3 years (C) $2\frac{1}{2}$ years (D) 1 year 8 months

Ans: A

8. It takes 17 full specific types of trees to make one tonne of paper. If there are 221 such trees in a forest, then to save $\frac{7}{13}$ part of the forest, how much of paper we have to save? [2014]

(A) 6 tonnes (B) 8 tonnes (C) 7 tonnes (D) 4 tonnes

Ans: C

Solution: 17 trees = 1 tonne paper

$$1 \text{ tree} = 1/17 \text{ tonne paper}$$

Total no. of trees in a forest = 221 trees

Trees to save = $\frac{7}{13} \times \text{total no. of trees in a forest}$

$$= \frac{7}{13} \times 221 = 7 \times 17 = 119 \text{ trees}$$

$$\text{Paper we have to save} = 1/17 \times 119 = 7 \text{ tonnes paper}$$

9. The average height of Sanchi and Aarav is 12p cm. The average height of Aarav, Charu and Deepika is 10p cm. The average height of Charu and Deepika is 8p cm. Find Sanchi's height in terms of p. [2015]

(A) 15 p cm (B) 12 p cm (C) 9 p cm (D) 10 p cm

Ans: D

10. A board 7 feet 9 inches long is divided into 3 equal parts. What is the length of each part? [2016]
 (A) 2 feet 9 inches (B) 2 feet 7 inches (C) 2 feet 12 inches (D) 2 feet 3 inches

Ans: B

Solution: 7 feet 9 inch = $7 \times 12 + 9 = 93$

There equal parts = $93/3 = 31$ inch = 2 feet 7 inch

11. The cost of a bag was 55% the cost of a skirt. If Mitika intended to buy both the bag and the skirt, then how much money must she have, if the skirt costs ₹ 31.50 more than the bag? [2012]
 (A) ₹ 38.50 (B) ₹ 70 (C) ₹ 108.50 (D) ₹ 120.55

Ans: C

Solution: Let the price of skirt be Rupees 'y'

As per given condition, cost of bag = $\left(\frac{55}{100}\right) \times y = \frac{11}{20}y$

Difference between the price of the bag and the skirt

$$= y - \frac{11}{20}y = \frac{9}{20}y = 31.50(\text{given})$$

Hence, $y = 70$ (cost of skirt)

Cost of Bag = 38.50

Therefore, total amount required to purchase both bag and skirt

= Rupees 108.50

12. Four persons step off together during a morning walk. Their steps measure 60 cm, 80 cm, 75 cm and 90cm respectively at what distance from the starting point will they again step off together? [2013]
 (A) 12 m (B) 36 m (C) 4 m (D) 72 m

Ans: B

13. Garima collected the data regarding weights of students of her class and prepared the following table:

Weight (in kg)	44-49	50-55	56-61	62-67
Number of students	8	15	25	17

A student is to be selected randomly from her class for some competition. The probability of selection of the student is highest whose weight (in kg) is in the interval _____. [2014]

- (A) 44-49 (B) 56-61 (C) 50-55 (D) 62-67

Ans: B

14. A shopkeeper bought $\frac{11}{12}$ kg of onions. He packed them into packets each containing $\frac{2}{15}$ kg of onions. [2015]
 (a) How many packets of onions did he get? (b) Find the weight of onions he had left.

(a)	(b)
(A) 5	5/18 kg
(B) 6	7/30 kg
(C) 6	7/60 kg
(D) 5	8/9 kg

Ans: C

15. Tarun studies for $5\frac{1}{4}$ hours daily. He devotes $2\frac{3}{4}$ hours of his time for English and Mathematics.

How much time does he devote for other subjects?

[2016]

- (A) 2 hours (B) $4\frac{2}{3}$ hours (C) $2\frac{1}{2}$ hours (D) $3\frac{1}{4}$ hours

Ans: C

Solution: Daily study time = $5\frac{1}{4} = 21/4$

Time for English & Math = $11/4$

Time for other subject = $21/4 - 11/4 = 10/4 = 5/2$

16. Jasmine and Sonia had 60 phone cards. Jasmine had thrice as many phone cards as Sonia.

How many phone cards did Jasmine have?

[2012]

- (A) 15 (B) 20 (C) 30 (D) 45

Ans: D

Solution: Let the number of phone cards available with Sonia be 'y'

Hence, the number of phone cards available with Jasmine = $3y$

Total number of phone cards = $y + 3y = 60$

Hence, $y = 15$

Therefore, the number of phone cards available with Jasmine = $3y = 3 \times 15 = 45$

17. Rajesh had a packet of 20 sketch pens. He gave 12 to Kartik and 6 to Meena.

What fractions of the packet did he give to Kartik and Meena?

[2013]

- (A) $\frac{3}{10}$ (B) $\frac{4}{5}$ (C) $\frac{9}{10}$ (D) $\frac{1}{5}$

Ans: C

18. In a test Abha gets twice the marks as that of Palak. Two times Abha's marks and three times Palak's marks make 280. The marks obtained by Abha are _____.

[2014]

- (A) 40 (B) 60 (C) 80 (D) 90

Ans: C

19. The ratio of the number of men to the number of women at a concert is 5 : 3. The ratio of the number of women to the number of children is 2 : 5, Find the ratio of the number of children to the total number of women and men in the concert.

[2015]

- (A) 15 : 16 (B) 16 : 15 (C) 13 : 12 (D) 12 : 13

Ans: A

20. Rihana took a loan of ₹ 1200 with simple interest for as many years as the rate of interest. If she paid ₹432 as interest at the end of the loan period. Find the time period she has taken to return the loan.

[2016]

- (A) 3.6 years (B) 6 years (C) 18 years (D) Cannot be determined

Ans: B

Solution: S.I = $P \times R \times T / 100$

$432 = 1200 \times T^2 / 100$

$T = 6$ years

21. A bus travelled 18 km in 20 minutes. How far could it travel in 1 hr 20 minutes? [2012]

- (A) 72 km (B) 118 km (C) 360 km (D) 108 km

Ans: A

Solution: Distance travelled = 18 km

Time taken = 20 min = $\frac{20}{60} = \frac{1}{3}$ hours

Speed = $\frac{18}{\frac{1}{3}} = 18 \times 3 = 54$ kmph

Now given time = 1 hr 20 min = $1 + \frac{20}{60} = 1 + \frac{1}{3}$ hours = $\frac{4}{3}$ hours

Speed = 54 kmph

Distance = $54 \times \frac{4}{3} = 72$ km

22. 20% of the students were absent in an examination. 15% of those who appeared failed. If 340 students passed, what was the total number of students? [2013]

- (A) 550 (B) 450 (C) 400 (D) 500

Ans: D

23. Supriya got ₹ 27480 as her monthly salary and over-time. Her salary exceeds the over-time by ₹ 8000. How much did she earn in a year (except overtime)? [2014]

- (A) ₹ 212880 (B) ₹ 156430 (C) ₹ 243820 (D) ₹ 198460

Ans: A

Solution: Let the overtime be Rs. X

Salary = Rs. (X + 8000)

$X + X + 8000 = 27480$

$2X = 27480 - 8000 = 19480$

$X = \text{Rs. } 9740$

Therefore monthly salary = $9740 + 8000 = \text{Rs. } 17,740$

She earns in a year = $17740 \times 12 = \text{Rs. } 212880$.

24. Rita's watch was 10 minutes fast. Her watch showed 1:05 p.m. when she left home. She travelled for 35 minutes and arrived 5 minutes early for her dental appointment. At what time was her dental appointment? [2015]

- (A) 13 : 20 hrs (B) 13 : 25 hrs (C) 13 : 35 hrs (D) 13 : 55 hrs

Ans: C

25. A shopkeeper sold an article for ₹ 2090.42 without any loss or profit. Approximately, what will be the profit percent, if he sold that article for ₹ 2602.58? [2016]

- (A) 15% (B) 20% (C) 25% (D) 30%

Ans: C

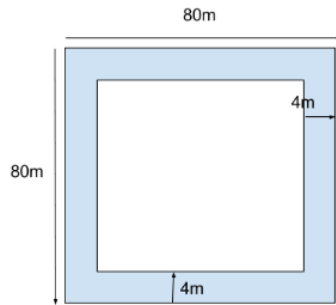
Solution: Profit = $2602.58 - 2090.42 = 512.16$

Profit % = $512.16/2602.58$ (25%)

26. The side of a square plot is 80 m. Paths of 4 m width along the sides of the square are constructed in the middle of the plot. Determine the area of the path. [2012]
- (A) 1216 m² (B) 1200 m² (C) 1360 m² (D) 624 m²

Ans: A

Solution:



As per the given condition, Side of outer Square = 80m

Hence, Area = $80 \times 80 = 6400 \text{ m}^2$

Now, the sides of the inner Square = $80 - (4+4) \text{ m} = 72 \text{ m}$

Area of inner square = $72 \times 72 = 5184 \text{ m}^2$

Therefore, Area of the path = $6400 - 5184 \text{ m}^2 = 1216 \text{ m}^2$

27. A man is five times as old as his son. He will be three times as old as his son after 10 years. Find their present ages. [2013]
- (A) 10 years, 50 years (B) 8 years, 40 years
(C) 12 years, 60 years (D) 6 years, 30 years

Ans: A

28. The lawn in front of Latika's house is $12 \text{ m} \times 8 \text{ m}$, whereas the lawn in front of Nisha's house is $15 \text{ m} \times 5 \text{ m}$. A bamboo fencing is built around both the lawns. How much fencing is required for both? [2014]
- (A) 40 m (B) 80 m (C) 60 m (D) 90 m

Ans: B

29. Lata spent 20% of the money she had on jeans and 5% on a pair of slippers. She was left with ₹ 2,700. How much money did she have in the beginning? [2015]
- (A) ₹ 3,600 (B) ₹ 4,900 (C) ₹ 3,800 (D) ₹ 6,200

Ans: A

30. Perimeter of a rectangular garden is $1.2 \times 10^5 \text{ km}$ and length is $0.2 \times 10^5 \text{ km}$. Find the area of the garden in standard form. [2016]
- (A) $8 \times 10^6 \text{ km}^2$ (B) $0.8 \times 10^8 \text{ km}^2$ (C) $80 \times 10^8 \text{ km}^2$ (D) $8.0 \times 10^8 \text{ km}^2$

Ans: D

Solution: Perimeter = 1.2×10^5 ; $l + b = 0.6 \times 10^5$

$b = 0.6 \times 10^5 - 0.2 \times 10^5 = 0.4 \times 10^5$

Area = $0.2 \times 0.4 \times 10^{10} = 8 \times 10^8$

31. A milkman sells 42 liters of milk at ₹ 19.75 per liter to a hostel.
How much money should he get from the hostel? [2012]
- (A) ₹ 1892 (B) ₹ 829.50 (C) ₹ 165.85 (D) ₹ 122.50

Ans: B

Solution: Price per Liter of milk = 19.75

Total quantity of milk sold = 42 L

Therefore, total price = 42×19.75
= Rupees 829.50

32. A park 300 m by 210 m has a path 5 m wide all round it, the path being inside the park.
Find the cost of constructing the path at ₹ 100 per 10 m². [2013]
- (A) ₹ 500 (B) ₹ 5000 (C) ₹ 50000 (D) ₹ 500000

Ans: C

33. Amit purchased 2 kg 200 g potatoes, 250 g rice, 15 kg 300 g wheat, 500 g apples and 2 kg 600 g tomatoes. Find the total weight of his purchases (in kilograms). [2014]
- (A) 25.75 kg (B) 18.65 kg (C) 20.85 kg (D) 15.95 kg

Ans: C

Solution: Weight of Potatoes = 2.2 kg

Weight of Rice = 250g

Weight of Wheat = 15.3kg

Weight of Apples = 0.5kg

Weight of Tomatoes = 2.6kg

Total weight of Purchases = $2.200 + 0.250 + 15.300 + 0.500 + 2.600$
= 20.85kg.

34. Juhi sells a washing machine for ₹ 13,500. She loses 20% in the bargain.
What was the price at which she bought it? [2015]
- (A) ₹ 16,875 (B) ₹ 17, 945 (C) ₹ 18,459 (D) ₹ 20,000

Ans: A

35. Find the cost of carpeting the room 13 m long and 9 m broad at the rate of ₹12.40 per square metre. [2016]
- (A) ₹ 1596 (B) ₹ 1800 (C) ₹ 1934 (D) None of these

Ans: D

Solution: Area of room = $13 \times 9 = 117$

Cost = $117 \times 12.4 = \text{Rs. } 1450.8$

36. By selling an article for ₹660, Pradeep loses ₹60. At what price must he sell the article to gain 15%? [2012]
- (A) ₹ 1892 (B) ₹ 628 (C) ₹ 828 (D) ₹ 928

Ans: C

Solution: Selling Price = 660

Loss incurred = 60

Cost price = $660 + 60 = 720$

Expected profit = 15%

Hence, new selling price (inclusive of profit percentage)

$$= \left(1 + \frac{15}{100}\right) \times 720$$

= Rupees 828

37. The melting point of mercury is -39°C . The freezing point of alcohol is -98°C .

How much more is the melting point of mercury as compared to the freezing point of alcohol? [2013]

- (A) -137°C (B) 137°C (C) -59°C (D) 59°C

Ans: D

38. Shivam purchased $42\frac{1}{2}$ litres of juice on Monday and $24\frac{3}{4}$ litres of juice on Tuesday.

How many liters of juice did he purchase together in two days? [2014]

- (A) $66\frac{2}{3}$ litres (B) $72\frac{3}{4}$ litres (C) $76\frac{1}{4}$ litres (D) $67\frac{1}{4}$ litres

Ans: D

Solution: Shivam's Monday purchase = $49\frac{1}{2}$ liters of juice

Tuesday Purchase = $24\frac{3}{4}$ liters of juice

$$\text{Total 2 days purchase} = 49\frac{1}{2} + 24\frac{3}{4} = 99\frac{1}{2} = 67\frac{1}{4}$$

39. A class has 20 girls and boys. One student is selected at random.

Find the probability that the selected student is a girl. [2015]

- (A) $\frac{1}{4}$ (B) $\frac{5}{9}$ (C) $\frac{3}{4}$ (D) $\frac{4}{9}$

Ans: B

40. The ages of two persons differ by 16 years. If 6 years ago, the elder one be 3 times as old as the younger one, find their present ages. [2016]

- (A) 15 years and 31 years (B) 14 years and 30 years
(C) 12 years and 28 years (D) 10 years and 26 years

Ans: C

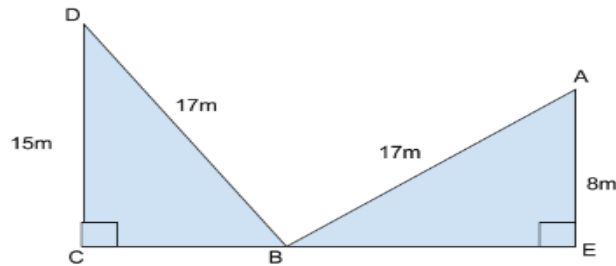
Solution: $x - y = 16$ and $x + 6 = 3(y + 6)$

Solving these equation we get $x = 28$ $y = 12$

41. There are two buildings standing on the opposite sides of a park. A ladder, 17 m long, reaches a point on a building at a height of 15 m from the ground. The ladder is now turned to the other building on the other side of the park keeping its foot at the same point. The ladder now reaches a point on this building at a height of 8 m above the ground. Find the distance between the two buildings. [2012]

- (A) 32 m (B) 18 m (C) 25 m (D) 23 m

Ans: D

Solution:

As per the given condition, BD and BA are the ladder of length 17 m.

Now both the given Triangles BCD and BEA are right triangles.

Also, (8, 15, 17) are Pythagorean triplets.

Therefore, BC = 8m; BE = 15m; Hence, CE = 23m

42. Nine counters numbers 1 to 9 are placed in a bag. One is taken out at random.

The probability that it is divisible by 3 is _____.

[2013]

(A) $\frac{1}{2}$

(B) $\frac{1}{3}$

(C) $\frac{2}{9}$

(D) $\frac{4}{9}$

Ans: B

43. Temperature of a place at 12:00 noon was 5 °C. Temperature increased by 3 °C in first hour and decreased by 1 °C in the second hour. What was the temperature at 2:00 pm?

[2014]

(A) 5 °C

(B) 7 °C

(C) 8 °C

(D) 6 °C

Ans: B

44. Raman goes to the school book store with ₹ 100. He purchases some books and comes back with ₹ 68.70 with him. After sometime, he goes again to the store with ₹ 250 and purchases some books and comes back with ₹ 165.50. How much did he spend in all and how much money is left with him?

[2015]

(A) ₹ 126.93, ₹ 234.20

(B) ₹ 234.20, ₹ 118.96

(C) ₹ 115.80, ₹ 234.20

(D) ₹ 115.80, ₹ 126.93

Ans: C

45. Every floor of 25 storey building is 5 m high. If a lift moves 2 meters every second, how long will it take to move from 3rd floor to 15th floor?

[2016]

(A) 32 seconds

(B) 40 seconds

(C) 30 seconds

(D) 25 seconds

Ans: C

Solution: distance traveled by lift = 12 floor = 12 * 5 = 60

Time taken = 60/2 = 30 sec

46. A place P is 82 m above the sea-level and another place is 13 m below the sea-level. What is the distance between the two places?

[2012]

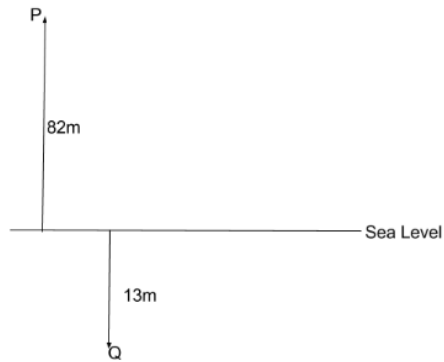
(A) 95 m

(B) 69 m

(C) -95 m

(D) -69 m

Ans: A

Solution:Distance between P and Q is $82 + 13 = 95\text{m}$

47. In a school, $8a^2 + 4a + 9$ students were enrolled. $2a^2 - 9a + 2$ students were boys.

How many girls were enrolled?

[2013]

- (A) $6a^2 - 13a + 7$ (B) $4a^2 + 13a + 7$ (C) $6a^2 + 13a + 7$ (D) $4a^2 - 13a + 7$

Ans: C

48. In a colony of 100 blocks of flats numbering 1 to 100, a school van stops at every sixth block while a school bus stops at every tenth block. On which stops will both of them stop if they start from the entrance of the colony?

[2014]

- (A) 30, 60, 90 (B) 20, 40, 80 (C) 30, 60, 80 (D) 40, 80, 100

Ans: A

49. Arun has a certain sum deposited in a bank at 5% per annum. The bank increases the rate of interest from 5% to 6%. After increase in rates, Arun deposits ₹ 2000 more in his account. The annual interest received by him now is ₹ 220 more than before. Find his original deposit.

[2015]

- (A) ₹ 12,000 (B) ₹ 13,250 (C) ₹ 6,792 (D) ₹ 10,000

Ans: D

50. Payal can cover a certain distance in 1 hr 24 mins by covering two-third of the distance at 4 km/hr. and the rest at 5 km/hr. Find the total distance.

[2016]

- (A) 2 km (B) 4 km (C) 8 km (D) 6 km

Ans: D**Solution:** Let distance be "x", $\frac{2x}{3} \times 4 + \frac{x}{3} \times 5 = 1\frac{2}{5}$

$$\frac{2x}{12} + \frac{x}{15} = \frac{7}{5}$$

$$X = 6\text{km}$$