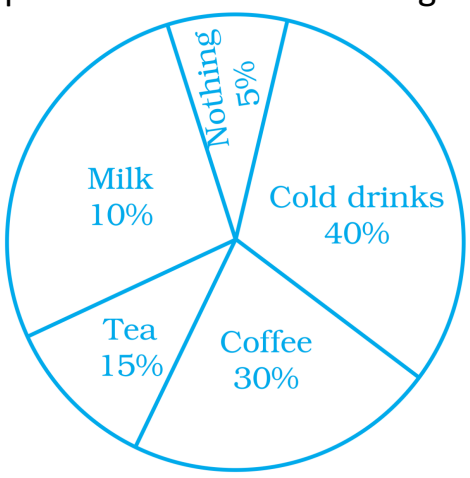
Q1. The population of a town increases at the rate of 40 per thousand annually. If the present population be 175760, what was the population three years ago. **3 Marks**

Q2. A survey was carried out to find the favourite beverage preferred by a certain group of young people. The following pie chart shows the findings of this survey. **3 Marks**



From this pie chart answer the following:

1. Which type of beverage is liked by the maximum number of people.
2. If 45 people like tea, how many people were surveyed?

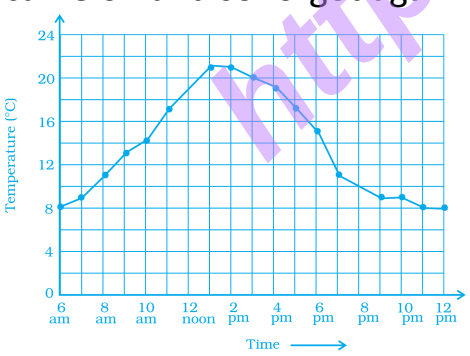
Q3. Ms. Cherian purchased a boat for Rs. 16000. If the total cost of the boat is depreciating at the rate of 5% per annum, calculate its value after 2 years. **3 Marks**

Q4. Kamal borrowed Rs. 57600 from LIC against her policy at $12\frac{1}{2}\%$ per annum to build a house. Find the amount that she pays to the LIC after $1\frac{1}{2}$ years if the interest is calculated half-yearly. **3 Marks**

Q5. On what sum will the compound interest at 5% per annum for 2 years compounded annually be Rs. 164? **3 Marks**

Q6. The present population of a town is 25000. It grows at 4%, 5% and 8% during first year, second year and third year respectively. Find its population after 3 years. **3 Marks**

Q7. As part of his science project, Prithvi was supposed to record the temperature every hour one Saturday from 6 am to midnight. At noon, he was taking lunch and forgot to record the temperature. At 8:00 pm, his favourite show came on and so forgot again. He recorded the data so collected on a graph sheet as shown below. **3 Marks**



1. Why does it make sense to connect the points in this situation?
2. Describe the overall trend, or pattern, in the way the temperature changes over the time period shown on the graph.
3. Estimate the temperature at noon and 8 pm.

Q8. Find the principal if the interest compounded annually at the rate of 10% for two years is Rs. 210. **3 Marks**

Q9. For each of the following numbers, find the smallest whole number by which it should be divided so as to get a perfect square. Also find the square root of the square number so obtained. **3 Marks**

Q10. Tell which property allows you to compare. **3 Marks**

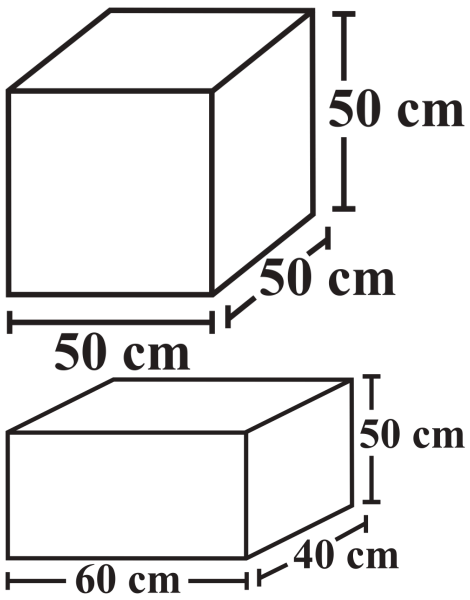
$\frac{2}{3} \times \left[\frac{3}{4} \times \frac{5}{7}\right]$ and $\left[\frac{2}{3} \times \frac{5}{7}\right] \times \frac{3}{4}$

Q11. A sum amounts to Rs. 756.25 at 10% per annum in 2 years, compounded annually. Find the sum. **3 Marks**

Q12. Arun bought a pair of skates at a sale where the discount given was 20%. If the amount he pays is Rs. 1,600, Find the marked price. **3 Marks**

Q13. There is a continuous growth in population of a village at the rate of 5% per annum. If its present population is 9261, what it was 3 years ago? **3 Marks**

Q14. There are two cuboidal boxes as shown in the adjoining figure. Which box requires the lesser amount of material to make? **3 Marks**



Q15. The population of a city is 125000. If the annual birth rate and death rate are 5.5% and 3.5% respectively, calculate the population of city after 3 years. **3 Marks**

Q16. Find the side of a cube whose surface area is 600cm^2. **3 Marks**

Q17. In what time will Rs. 4400 become Rs. 4576 at 8% per annum interest compounded half-yearly? **3 Marks**

Q18. A certain sum amounts to Rs. 5832 in 2 years at 8% compounded interest. Find the sum. **3 Marks**

Q19. The production of a mixi company in 1996 was 8000 mixies. Due to increase in demand it increases its production by 15% in the next two years and after two years its demand decreases by 5%. What will be its production after 3 years? **3 Marks**

Q20. Find the rate percent per annum, if Rs. 2000 amount to Rs. 2315.25 in an year and a half, interest being compounded six monthly. **3 Marks**

Q21. Pritam bought a plot of land for Rs. 640000. Its value is increasing by 5% of its previous value after every six months. What will be the value of the plot after 2 years? **3 Marks**

Q22. For each of the following numbers, find the smallest whole number by which it should be multiplied so as to get a perfect square number. Also find the square root of the square number so ob **3 Marks**

Q23. For each of the following numbers, find the smallest whole number by which it should be divided so as to get a perfect square. Also find the square root of the square number so obtained. **3 Marks**
2645

Q24. What will happen to the volume of the cube, if its edge is: **3 Marks**
1. Tripled.
2. Reduced to one-fourth?

Q25. Find the rate percent per annum if Rs. 2000 amount to Rs. 2662 in $1\frac{1}{2}$ years, interest being compounded half-yearly? **3 Marks**

Q26. At what rate percent compound interest per annum will Rs. 640 amount to Rs. 774.40 in 2 years? **3 Marks**

Q27. Find the rate at which a sum of money will double itself in 3 years, if the interest is compounded annually. **3 Marks**

Q28. The annual rate of growth in population of a certain city is 8%. If its present population is 196830, what it was 3 years ago? **3 Marks**

Q29. The value of a machine depreciates at the rate of 10% per annum. What will be its value 2 years hence, if the present value is Rs. 100000? Also, find the total depreciation during this period. **3 Marks**

Q30. In what time will Rs. 1000 amount to Rs. 1331 at 10% per annum, compound interest? **3 Marks**

Q31. The present population of a town is 28000. If it increases at the rate of 5% per annum, what will be its population after 2 years? **3 Marks**

Q32. Aman started a factory with an initial investment of Rs. 100000. In the first year, he incurred a loss of 5%. However, during the second year, he earned a profit of 10% which in the third year rose to 12%. Calculate his net profit for the entire period of three years. **3 Marks**

Q33. Find the amount of Rs. 2400 after 3 years, when the interest is compounded annually at the rate of 20% per annum. **3 Marks**

Q34. Simplify: $a(a^2 + a + 1) + 5$ and find its values for **3 Marks**

1. a = 0
2. a = 1
3. a = -1.

Q35. Rachana borrowed a certain sum at the rate of 15% per annum. If she paid at the end of two years Rs. 1290 as interest compounded annually, find the sum she borrowed. **3 Marks**

Q36. In a stack there are 5 books each of thickness 20mm and 5 paper sheets each of thickness 0.016mm. What is the total thickness of the stack. **3 Marks**

Q37. What sum will amount to Rs. 4913 in 18 months, if the rate of interest is $12\frac{1}{2}\%$ per annum, compounded half-yearly? **3 Marks**

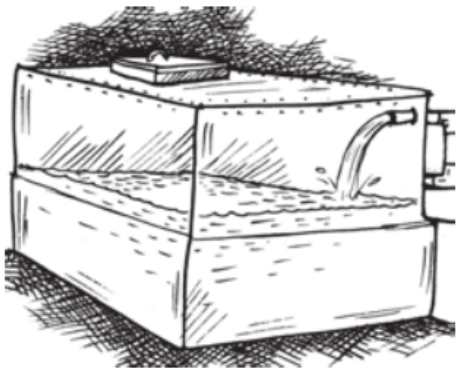
Q38. In a factory the production of scooters rose to 46305 from 40000 in 3 years. Find the annual rate of growth of the production of scooters. **3 Marks**

Q39. The difference between the compound interest and simple interest on a certain sum for 2 years at 7.5% per annum is Rs. 360. Find the sum. **3 Marks**

Q40. The population of a town increases at the rate of 50 per thousand. Its population after 2 years will be 22050. Find its present population. **3 Marks**

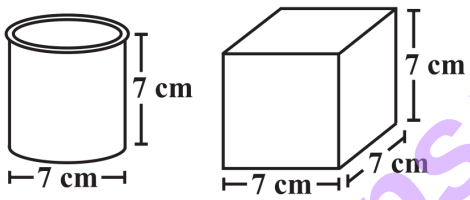
Q41. Find the height of the cylinder whose volume is 1.54m^3 and diameter of the base is 140cm? **3 Marks**

Q42. Water is pouring into a cubiodal reservoir at the rate of 60 litres per minute. If the volume of reservoir is 108m^3, find the number of hours it will take to fill the reservoir. **3 Marks**



Q43. A school has 8 periods a day each of 45 minutes duration. How long would each period be, if the school has 9 periods a day, assuming the number of school hours to be the same? **3 Marks**

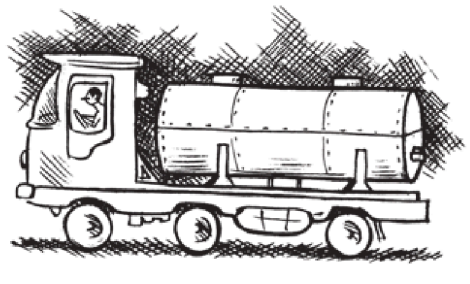
Q44. Describe how the two figures at the right are alike and how they are different. Which box has larger lateral surface area? **3 Marks**



Q45. Given a cylindrical tank, in which situation will you find surface area and in which situation volume. **3 Marks**

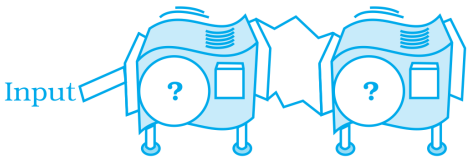
1. To find how much it can hold.
2. Number of cement bags required to plaster it.
3. To find the number of smaller tanks that can be filled with water from it.

Q46. A milk tank is in the form of cylinder whose radius is 1.5m and length is 7m. Find the quantity of milk in litres that can be stored in the tank? **3 Marks**

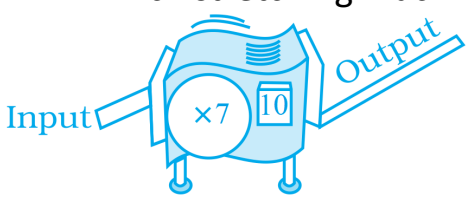


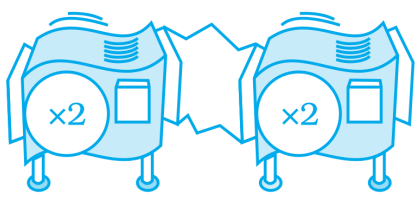
Q47. Two machines can be hooked together. When something is sent through this hook up, the output from the first machine becomes the input for the second. **3 Marks**

1. Which two machines hooked together do the same work a (x102) machine does? Is there more than one arrangement of two machines that will work?



2. Which stretching machine does the same work as two (x2) machines hooked together?





Q48. Meera borrowed a sum of Rs. 1000 from Sita for two years. if the rate of interest is 10% compounded annually, find the amount that Meera has to pay back. **3 Marks**

Q49. Rahman lent Rs. 16000 to Rasheed at the rate of $12\frac{1}{2}\%$ per annum compound interest. Find the amount payable by Rasheed to Rahman after 3 years. **3 Marks**

Q50. In how much time would Rs. 5000 amount to Rs. 6655 at 10% per annum compound interest? **3 Marks**

Q51. There are 500 children in a school. For a P.T. drill they have to stand in such a manner that the number of rows is equal to number of columns. How many children would be left out in this a **3 Marks**

Q52. 2025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row. **3 Marks**

Q53. The given table shows the crop production of a State in the year2008 and 2009. Observe the table given below and answer the given questions. **3 Marks**

Crop	**2008 Harvest (Hectare)**	**Increase/ Decrease (Hectare) in 2009**
Bajra	1.4×10^3	-100
Jowar	1.7×10^6	-440,000
Rice	3.7×10^3	-100
Wheat	5.1×10^5	+190,000

1. For which crop(s) did the production decrease?
2. Write the production of all the crops in 2009 in their standard form.
3. Assuming the same decrease in rice production each year as in 2009, how many acres will be harvested in 2015? Write in standard form.

Q54. Find the rate at which a sum of money will become four times the original amount in 2 years, if the interest is compounded half-yearly. **3 Marks**

Q55. Following are the car parking charges near a railway station upto **3 Marks**

4 hours	₹ 60
8 hours	₹ 100
12 hours	₹ 140
24 hours	₹ 180

Check if the parking charges are in direct proportion to the parking time.

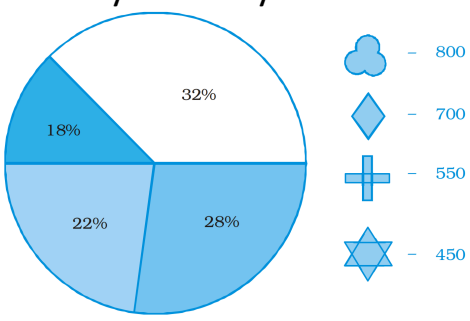
Q56. A mixture of paint is prepared by mixing 1 part of red pigments with 8 parts of base. In the following table, find the parts of base that need to be added. **3 Marks**

Parts of red pigment	1	4	7	12	20
Parts of base	8	----	----	----	----

Q57. **3 Marks**

The difference between the S.I. and C.I. on a certain sum of money for 2 years at 4% per annum is Rs. 20. Find the sum.

Q58. Identify which symbol should appear in each sector in 113, 114. **3 Marks**



Q59. The radius and height of a cylinder are in the ratio 3 : 2 and its volume is 19,404cm^3. Find its radius and height. **3 Marks**

Q60. Three bags contain 64.2kg of sugar. The second bag contains $\frac{4}{5}$ of the contents of the first and the third contains $45\frac{1}{2}\%$ of what there is in the second bag. How much sugar is there in each bag? **3 Marks**