NAAHAR PUBLIC SCHOOL(CBSE)SENIOR SECONDARY
PERIODIC TEST -2

**SUB: MATHS** **MARKS : 50**

**GRADE : VIII**

**I.Choose the best answer:** **8 X 1 = 8**

1. Which of the following numbers is a cube number ?
(a) 1000 (b) 400 (c) 100 (d) 600.
2. Which of the following is correct?
I. Cube of a negative number is always positive.
II. Cube of a negative number is always negative.
III. Cube of a negative number may be positive or negative.
IV. All of the above
3. The prime factorisation of 64 is:
a) 2 x 2 x 2 b) 4 x 4 x 4 c) 8 x 8 x 8 d) None of the above
4. The ratio 4 : 25 converted to percentage is
(a) 8% (b) 4% (c) 16% (d) 25%.
5. The ratio of 50 paise to Rs. 1 is
(a) 1 : 2 (b) 2 : 1 (c) 1 : 1 (d) 1 : 5.
6. what would be 25%, when we represent it as a fraction?
(a) ½ (b) ¼ (c) 1/5 (d) 1/6
7. . A _____ is a bar graph that shows data in intervals.
(a). Bar-graph (b). Pie-chart (c). Histogram (d). Line Graph
8. The point (0,0) lies at:
(a). x-axis (b). y-axis (c). origin (d). None of the above

**II.Fill in the blanks** **7 x 1 = 7**

9.The cube of 2a is $8a^3$
10. A discount is calculated by Marked price
11. A profit or profit loss is calculated by cost price
12. Simple interest = PNR /100
13. Amount = Principal ( 1 + Rate/100)$^n$
14.A Pie graph is used to compare parts of a whole
15.A line graph displays data that changes continuously over periods of time

**III.Three marks:** **6 x 3 = 18**

16. Find the smallest number by which 243 must be multiplied to get a perfect cube.
**SOL;** We have 243 = 3 × 3 × 3 × 3 × 3

| | |
|---|---|
| 3 | 243 |
| 3 | 81 |
| 3 | 27 |
| 3 | 9 |
| 3 | 3 |
| | 1 |

The prime factor 3 is not a group of three.
∴ 243 is not a perfect cube.
Now, [243] × 3 = [3 × 3 × 3 × 3 × 3] × 3
or 729 =3 × 3 × 3 × 3 × 3 × 3

Now, 729 becomes a perfect cube.
Thus, the smallest required number to multiply 243 to make it a perfect cube is 3.

17. In a Laboratory, the count of bacteria in a certain experiment was increasing at the rate of 2.5% per hour. Find the bacteria at the end of 2 hours if the count was initially 5,06,000.
Solution:
Given: Initial count of bacteria = 5,06,000
Rate = 2.5% per hour
n = 2 hours
Number of bacteria at the end of 2 hours = Number of count of bacteria initially

$$\times \left(1+\frac{R}{100}\right)^n$$

$$= 5,06,000\left(1+\frac{2.5}{100}\right)^2$$

$$= 5,06,000\times\left(\frac{41}{40}\right)^2$$

$$= \overset{1265}{\cancel{5,06,000}} \times \frac{1681}{\cancel{1600}_{8_4}}$$

$$= 531616.25$$

Thus, the number of bacteria after two hours = 5,31,616 (approx).

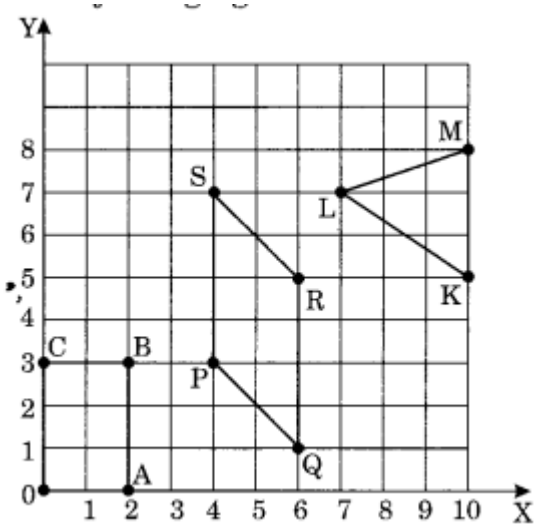
18. The price of a TV is ₹ 13,000. The sales tax charged on it is at the rate of 12%. Find the amount that Vinod will have to pay if he buys it.
Solution:
Marked price of the TV = ₹ 13,000
ST = 12%

$$SP = MP \times \left(1+\frac{ST}{100}\right)$$

$$= 13,000 \times \left(1+\frac{12}{100}\right)$$

$$= \cancel{13,000} \times \frac{112}{\cancel{100}} = ₹\ 14,560$$

The required amount that Vinod has to pay = Rs.14,560
19. Write the coordinates of the vertices of each of these adjoining figures.

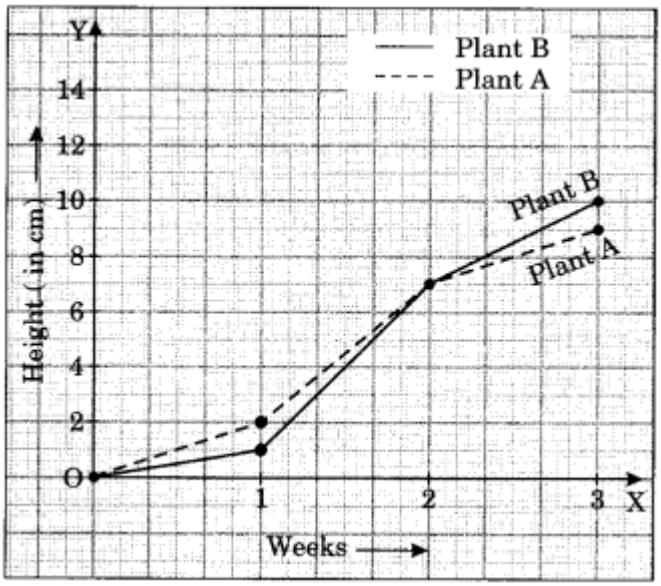



Solution:
Required coordinates are as follows:
Coordinates of rectangle OABC are:
O(0, 0), A(2, 0), B(2, 3), C(0, 3)
Coordinates of parallelogram PQRS are:
P(4, 3), Q(6, 1), R(6, 5), S(4, 7)
Coordinates of triangle KLM are:
K(10, 5), L(7, 7), M (10, 8).

20. Check Whether 128 is a perfect cube or not ?
Sol;
Prime factorisation of 128 is:
$128 = \underline{2 \times 2 \times 2} \times \underline{2 \times 2 \times 2} \times 2$
Here, 2 is left without making a group of three.
Thus 128 is not a perfect cube.

| | |
|---|---|
| 2 | 128 |
| 2 | 64 |
| 2 | 32 |
| 2 | 16 |
| 2 | 8 |
| 2 | 4 |
| 2 | 2 |
| | 1 |

21 For an experiment in Botany, two different plants, plant A and plant B, were grown under similar laboratory conditions. Their heights were measured at the end of each week for 3 weeks. The results are shown by the following graph.




(a) How high was plant A after (i) 2 weeks (ii) 3 weeks
Solution:
(a) The height of plant A (i) after 2 weeks was 7 cm (ii) after 3 weeks was 9 cm.

(b) How high was plant B after (i) 2 weeks (ii) 3 weeks
Sol; (b) The height of plant B (i) after 2 weeks was 7 cm (ii) after 3 weeks was 10 cm.

(c) How much did plant A grow during the 3rd week?
Sol; (c) Plant A grew 7 cm to 9 cm i.e, 2 cm.

**IV. Five marks:** **4 x 5 = 20**

22.If 60% of people in a city like a cricket, 30% like football and the remaining like other games, then what per cent of the people like other games? If the total number of people are 50 lakh, find the exact number who like each type of game.
**Solution:**
Total number of people = 50,00,000
Number of people who like cricket = 60% of 50,00,000
= 60 / 100 × 50,00,000
= 30,00,000
Number of people who like football = 30% of 50,00,000
= 30 / 100 × 50,00,000
= 15,00,000
Number of people who like other games = 50,00,000 – (30,00,000 + 15,00,000)
= 50,00,000 – 45,00,000
= 5,00,000
Percentage of the people who like other games = 500000 / 5000000 × 100 = 10%
Hence, 10% of people like other game.
23. The population of a place increased to 54,000 in 2003 at a rate of 5% per annum.
(i) Find the population in 2001.
(ii) What would be its population in 2005?
**Solution:**
(i) Given: Population in 2003 = 54,000
Rate = 5% pa

Time = 2003 – 2001 = 2 years
Population in 2003 = Population in 2001

$$\times \left(1+\frac{R}{100}\right)^n$$

$$54{,}000 = \text{Population in } 2001 \times \left(1+\frac{5}{100}\right)^2$$

$$\Rightarrow \quad 54{,}000 = \text{Population in } 2001 \times \left(\frac{21}{20}\right)^2$$

$$\Rightarrow \quad 54{,}000 = \text{Population in } 2001 \times \frac{441}{400}$$

$$\therefore \text{ Population in } 2001 = \frac{54{,}000 \times 400}{441}$$

$$= \frac{21{,}6{,}00{,}000}{441} = 48{,}979.59$$

$$= 48{,}980 \text{ (approximately)}$$

(*ii*) Population in 2005 = Population in 2003

$$\times \left(1+\frac{R}{100}\right)^n$$

$$= 54{,}000 \times \left(1+\frac{5}{100}\right)^2$$

$$= 54000 \times \left(\frac{21}{20}\right)^2$$

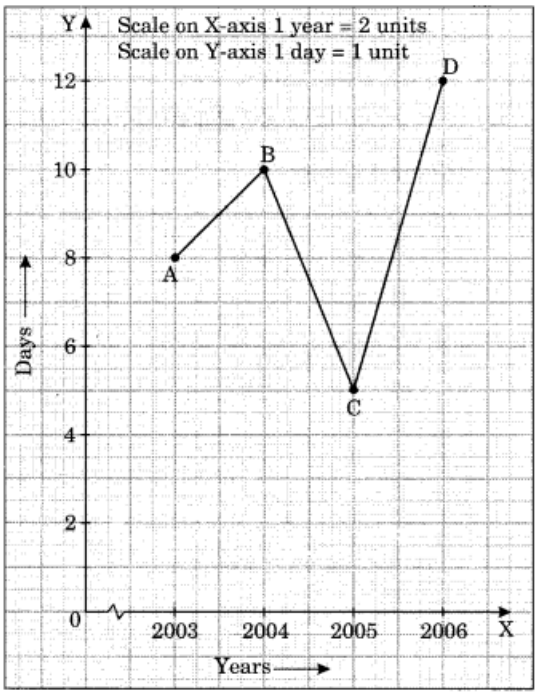
$$= \overset{135}{\cancel{54000}} \times \frac{441}{\cancel{400}}$$

$$= 135 \times 441 = 59{,}535$$

24.Use the tables below to draw linear graphs.
The number of days a hill side city recovered show in different years.

| Year | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|
| Days | 8 | 10 | 5 | 12 |

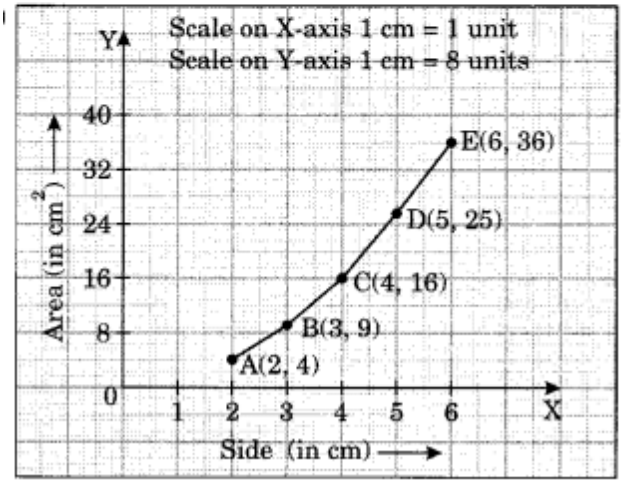
Solution:




25. Draw the graph for the following: Is it a linear graph.

| **Side of square (in cm)** | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| **Area (is $cm^2$)** | 4 | 9 | 16 | 25 | 36 |

Solution:




No, it is not a linear graph.