

## Cubes & Cube Roots

### Chapter - 2

Q1. Write the unit's digit of the cube of each of the following numbers :

(a) 110592

(b) 1860867

(c) 857375

Q2. Find the cube root of the following by Factorization :

(a) -2197

(b) -4913

(c) 1157625

(d) 21952

Q3. Find the cube root of :

(a) 0.000216

(b)  $5\frac{104}{125}$

(c)  $\frac{27}{125}$

(d)  $\frac{-64}{1000}$

(e)  $63 \times 147$

(f)  $\frac{-2744}{6859}$

Q4. Evaluate :

(a)  $\sqrt[3]{216 \times 343}$

(b)  $\left(\frac{1331}{4096}\right)^{1/3}$

(c)  $\sqrt[3]{\frac{0.027}{0.008}} \div \sqrt{\frac{0.09}{0.04}} - 1$

(d)  $\sqrt[3]{0.125} + \sqrt[3]{\frac{1}{0.008}} - \sqrt[3]{0.1 \times 0.1 \times 0.1 \times 1.3 \times 1.3 \times 1.3}$

Q5. If  $x^3 = \frac{729}{2197}$  and  $y^3 = \frac{9261}{42875}$ , then find  $x + y$ .

Q6. Find the value of  $x$  in the following :

(a)  $4x^3 = 864$

(b)  $x^3 + 12 = 1343$

(c)  $x^3 = 64$

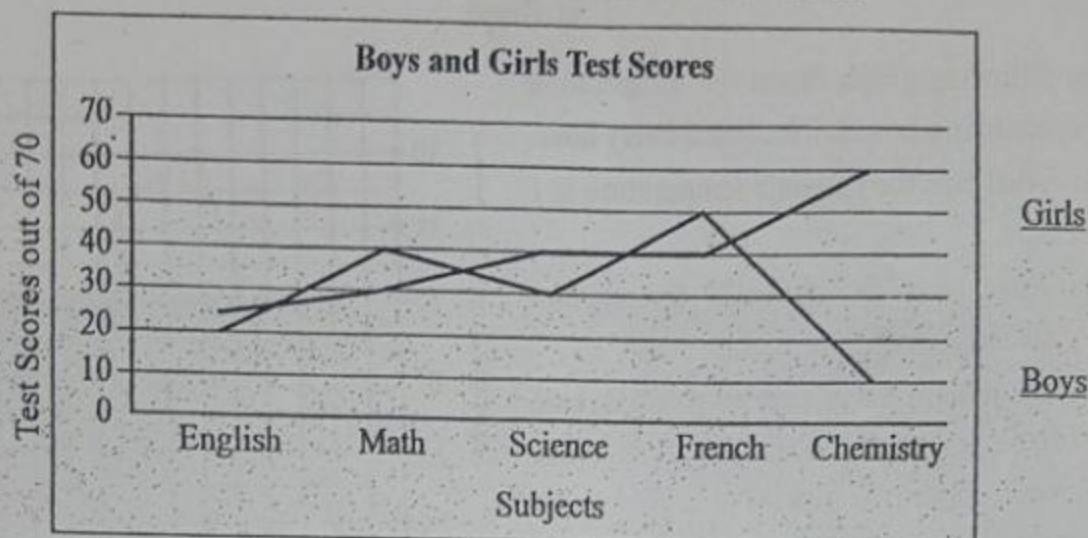
Q7. Three numbers are in ratio 1 : 2 : 3. The sum of their cubes is 12348. Find the numbers.

Q8. Find the length of the side of a cube whose volume is  $15625 \text{ cm}^3$ .

(b) To get an interest of Rs. 420, how much money should be deposited ?

(c) Does the graph pass through origin ?

4. Use the line graph to match each question to the correct answer.



	Column (A)	Column (B)
(i)	Who get 20 out of 70 in English?	(a) Chemistry
(ii)	Who get 40 out of 70 in Science?	(b) Boys
(iii)	What did the boy get in Maths?	(c) 60
(iv)	What did the girls get in Chemistry?	(d) 40
(v)	In which subject did the girls get the highest score?	(e) Girls

5. Parul is driving a car constantly at a speed of 30 km/h. Draw a distance-time graph in this case. Also, find the time taken by Parul to cover a distance of 120 km.

6. Reena deposited Rs. 12000 in a bank at the rate of 10% per annum. Draw a linear graph showing the relationship between the time and simple interest. Also, find the simple interest for 4 years.

7. Ajit can ride a scooter constantly at a speed of 30 kms/hour. Draw a time-distance graph for this situation. Use it to find :

(i) the time taken by Ajit to ride 75 km.

(ii) the distance covered by Ajit in  $3\frac{1}{2}$  hours.

8. Choose the correct option :

(a) On which axis does the point (5, 0) lie ?

- (i) x-axis                      (ii) y-axis                      (iii) origin                      (iv) none of these

Q9. Fill in the blanks :-

- (a) \_\_\_\_\_ deplete the ozone layer.
- (b) \_\_\_\_\_ causes acid rain.
- (c) \_\_\_\_\_ is celebrated in the month of July every year.
- (d) The substances which contaminate the air and water are called \_\_\_\_\_.

Q10. How does air get polluted ?

Q11. The level of air pollution is higher at a busy traffic intersection. Why ?

Q12. We should plant trees and nurture the ones already present in the neighbourhood. Why ?

Ch : Source of Energy

Q1. Fill in the blanks :

- (i) On heating in air, coal mainly produces \_\_\_\_\_ gas.
- (ii) Coal and petroleum are formed from the dead remains of organism and are known as \_\_\_\_\_.
- (iii) The process of separating the various constituents of petroleum is known as \_\_\_\_\_.
- (iv) During the processing of coal to get <sup>coke</sup> cake, coal tar & \_\_\_\_\_.

Q2. Where do we get coal and how is it formed ?

Q3. Why say fossil fuels will last only for a few hundred years. Comment.

Q4. Describe the advantages of using natural gas.

Q5. What are the different types of coal ? On what basis they are classified.

Q6. Combustion of fossil fuels generated a lot of air pollution. Can you suggest any two alternative sources of energy which do not cause any pollution ?

Q7. Explain the destructive distillation <sup>of coal</sup> with the help of an activity.

Q8. Which petroleum product is been used for the following -

- (a) for making roads
- (b) for making ointments
- (c) for making candles
- (d) used in scooter

Q3. How can water be purified ?

Q4. How can we reduce, reuse and recycle water ?

Q5. Name the method used to remove germs from water.

Q6. What are the causes of water pollution ?

Ch : Air Pollution *stand*

Q1. What do CFC's stand for ? Name some devices where CFC's are used. Why CFC's are considered as pollutants ?

Q2. It is said, "CO<sub>2</sub> contributes to global warming." Explain *Explain*

Q3. A lot of dry leaves are collected in a school garden and are burnt everyday. Do you think that it is right to do so ? If not, what should be done to dispose off the dry leaves ?

Q4. Describe the threat to the beauty of Taj Mahal.

Q5. What are the two main reasons for increase in earth temperature ?

Q6. What is meant by "Marble Cancer" ?

Q7. ~~Why does the increased level of nutrients in the water affect the survival of aquatic organism.~~

~~At an individual level, how can you help reduce air pollution.~~

## Ch 2 : Micro-organisms : Friends or Foes

### I. Fill in the blanks :-

1. Malaria is spread by \_\_\_\_\_.
2. Flue is spread through \_\_\_\_\_.
3. Diarrhoea is spread by contaminated \_\_\_\_\_.
4. Adding salt in food helps in removal of \_\_\_\_\_ from food.
5. Sodium benzoate is a \_\_\_\_\_.

### II. Answer the following questions :-

1. Define microorganisms.
2. Explain the beneficial role of microorganisms in agriculture.
3. How do bacteria cause tooth decay ?
4. What do you understand by food poisoning ?
5. What are the main goals of food preservation ?

### III. Answer the following questions in brief :

1. Make a list of food items which can be preserved by drying in the sun.
2. Make a list of food items which are preserved by using salt or sugar.
3. How does your family ensure that you get clean and safe drinking water ? What are its benefits ?

# SQUARES & SQUARE ROOTS

## CHAPTER - 1

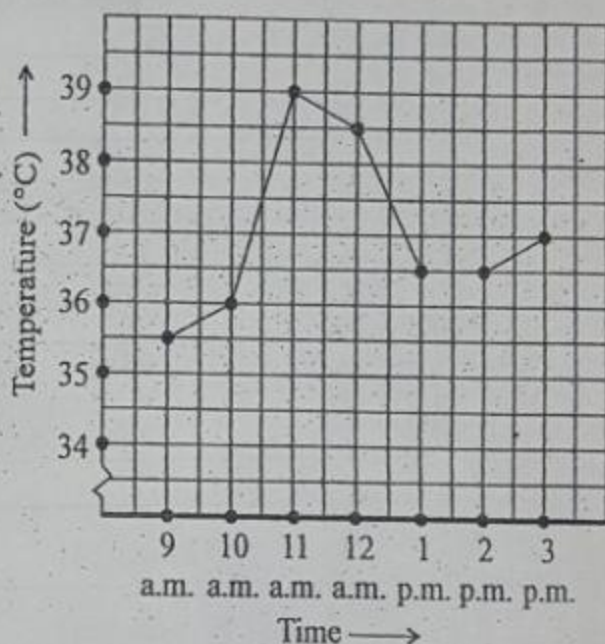
- Q1. The following numbers are obviously not the perfect squares. Give reasons :
- (a) 762      (b) 7810      (c) 5528      (d) 23067      (e) 83103
- Q2. How many natural numbers lie between :
- (a)  $5^2$  and  $6^2$       (b)  $13^2$  and  $14^2$       (c)  $80^2$  and  $81^2$       (d)  $900^2$  and  $901^2$
- Q3. Write a Pythagorean triplet in which one member is :
- (a) 12      (b) 30      (c) 18      (d) 65
- Q4. Find the square root of the following perfect squares using Prime Factorisation Method.
- (i) 169      (ii) 1521      (iii) 2025      (iv) 1764  
(v) 900      (vi) 4096
- Q5. 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 obtained.
- (i) 180      (ii) 1575      (iii) 1620      (iv) 1008
- Q6. For each of the following numbers, find the smallest whole number by which it should be divided so as to get a perfect square number. Also find the square root of the square number obtained.
- (i) 396      (ii) 252      (iii) 2800      (iv) 2645
- Q7. Find the square of the following decimal numbers
- (i) 7.29      (ii) 610.09      (iii) 2.108304      (iv) 42.25
- Q8. Find the greatest 5-digit number, which is a perfect square.
- Q9. Find the smallest 3-digit number, which is a perfect square.
- Q10. Find the least number that should be added to each of the following numbers so as to get a perfect square.
- (i) 286      (ii) 360      (iii) 525      (iv) 1825      (v) 1300

## CHAPTER : Introduction to Graphs

### Line Graph

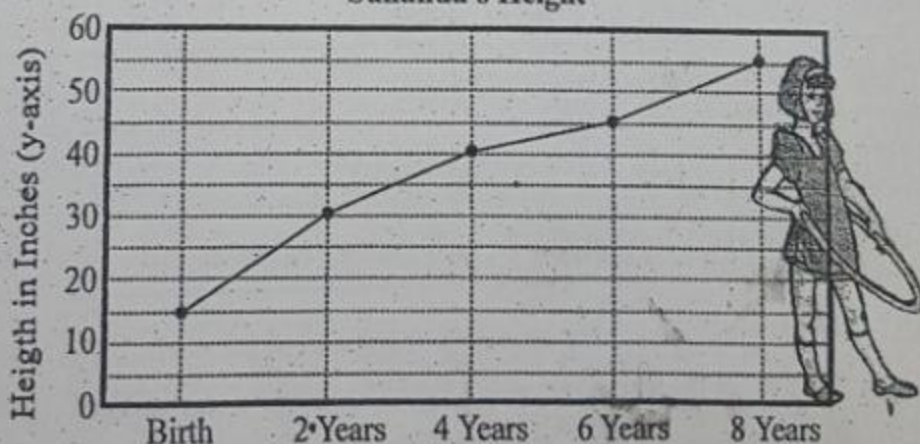
1. The following graph shows the temperature of a patient in a hospital, recorded every hour.

- What was the patient's temperature at 1 p.m.?
- When was the patient's temperature  $38.5^{\circ}\text{C}$ ?
- The patient's temperature was the same two times during the period given. What were these two times?
- What was the temperature at 1.30 p.m.? How did you arrive at your answer?
- During which periods did the patients' temperature show an upward trend?



2. Sunanda's family has kept track of her height. Below is a line graph showing how her height has changed as she aged. Use the graph to answer the questions.

Sunanda's Height



- How tall was Sunanda when she was 4 years old?
- How much had Sunanda grown from the time she was born to 6 years old?
- How old was Sunanda when she was 30 inches tall?
- How tall might Sunanda be when she is 10 years old?
- About how tall might Sunanda have been when she was 5 years old?

3. Draw the graph for the following table of values. Interest on deposits for a year :

Deposit in Rs.	1000	2000	3000	4000	5000
Interest in Rs.	60	120	180	240	300

- Use the graph to find the interest on a deposit of Rs. 4500 for a year.