

7. Cubes and Cube Roots

Q 1 Find the cube of 18.

Mark (1)

Q 2 Express 6^3 as the sum of odd numbers using the pattern given below.

$$1 = 1 = 1^3$$

$$3 + 5 = 8 = 2^3$$

$$7 + 9 + 11 = 27 = 3^3$$

$$13 + 15 + 17 + 19 = 64 = 4^3$$

$$21 + 23 + 25 + 27 + 29 = 125 = 5^3$$

Mark (1)

Q 3 Show that 189 is not a perfect cube.

Mark (1)

Q 4 Find the number whose cube is 9261.

Mark (1)

Q 5 Find the cube root of 512.

Mark (1)

Q 6 Evaluate: $(0.8)^3$

Mark (1)

Q 7

Find the cube of $1\frac{2}{3}$.

Mark (1)

Q 8 Evaluate: $\sqrt[3]{4^3 \times 6^3}$

Mark (1)

Q 9 Find the one's digit of the cube of each of the following:

(a) 1024

(b) 71

Marks (2)

Q 10 Find the smallest number by which 12500 must be multiplied so that the product is a perfect cube.

Marks (2)

Q 11 Find the smallest number by which 704 must be divided to obtain a perfect cube.

Marks (2)

Q 12 Find the cube root of 140×2450 .

Marks (2)

Q 13

Find the cube root of $\frac{125}{512}$

Marks (2)

Q 14 Find the cube root of 10648 by prime factorisation method.

Marks (2)

Find the cube of $5\frac{2}{7}$.

Q 15

Marks (2)

Q 16 Find the cube root of 1.331.

Marks (2)

Q 17

Evaluate: $\sqrt[3]{8 \times 17 \times 17 \times 17}$

Marks (2)

Q 18 Find the cube root of 27×1728 .

Marks (2)

Q 19 Find the cube root of 5832.

Marks (2)

Q 20 Find the cube root of 91125.

Marks (2)

Q 21

Evaluate : $\sqrt[3]{125 \times 27}$

Marks (2)

Q 22

Evaluate:

$$\sqrt[3]{700 \times 2 \times 49 \times 5}$$

Marks (2)

Q 23 Find the cube root of 32768 through estimation.

Marks (3)

Q 24 Find the smallest number by which 1600 must be divided so that the quotient is a perfect cube, further find its cube root.

Marks (3)

Q 25 Sheetal makes a cuboid of sides 5 cm, 2 cm and 5 cm. How many such cuboids will she need to form a cube?

Marks (3)

Q 26 Find the cube root of the following by prime factorisation.

(i) 8000

(ii) 13824

Marks (4)

Q 27 Find the smallest number which when multiplied with 3600 will make the product a perfect cube. Further find the cube root of the product.

Marks (4)

Q 28 The three numbers are in the ratio 2 : 3 : 4. The sum of their cubes is 33957. Find the numbers.

Marks (4)

Q 29 The volume of a cube is 9261000 m^3 . Find the side of the cube.

Marks (4)

Q 30 Find the cube root of the following by prime factorisation.

(i) 8000

(ii) 13824

Marks (4)

Most Important Questions

Q 1

Find the cubes of the following numbers:

(a) 5

(b) 13

(c) 50

(d) 120

Q 2

The smallest number by which 120393 must be divided, so that the quotient is a perfect cube

- (a) 7 (b) 12
(c) 13 (d) 3

Q 3

Which of the following is the cube of an odd natural number:

- (a) 32678 (b) 4096
(c) 6859 (d) 1728

Q 4

Which of the following are the cubes of even natural numbers?

- (a) 729 (b) 3375
(c) 1331 (d) 13824

Q 5 Match the items in list A with suitable items in list B.

List A

List B

A. $\sqrt[3]{\frac{27}{5832}}$

(i) $\frac{7}{5}$

B. $\sqrt[3]{\frac{343}{125}}$

(ii) $\frac{13}{8}$

C. $\sqrt[3]{\frac{-2197}{-512}}$

(iii) $\frac{1}{6}$

(iv) $\frac{-13}{8}$

Code :

- (a) A-ii, B-iv, C-i (b) A-iii, B-i, C-ii
(c) A-iv, B-ii, C-iii (d) A-i, B-iii, C-iv

If $x = \left(\frac{729}{2197}\right)^{1/3} + \left(\frac{9261}{42875}\right)^{1/3}$. Then $x =$

- (a) $\frac{84}{65}$ (b) $\frac{94}{65}$
(c) $\frac{104}{65}$ (d) $\frac{124}{65}$

Q 6

If $x = \left(\frac{4}{9}\right)^3 + \sqrt[3]{\frac{2744}{729}}$, then $x =$

- (a) $\frac{1298}{729}$ (b) $\frac{1200}{729}$
(c) $\frac{1198}{729}$ (d) $\frac{1100}{729}$

Q 7

Q 8 One's place digit in the cube of 833 is

- (a) 7 (b) 3
(c) 9 (d) 1

Q 9 What is the cube root of 531441?

Q 10 Find the smallest number by which 243 must be multiplied so that the product is a perfect cube.

If $\sqrt[3]{\frac{x}{y}} = \frac{2}{3}$, then the value of $\frac{x}{y}$ is

(a) $\frac{2}{3}$

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

(c) $\frac{8}{27}$

(d) None of these

Q 11

Q 12 If 9A is a perfect cube number what will be the value of A.

Q 13 What will be the Unit place digit in cube root of 1331?

Q 14 Find the cube root of $\sqrt[3]{-2300 \times 5290}$.

Q 15 Find the value of $\sqrt[3]{392} \times \sqrt[3]{448}$.