**CBSE CLASS 8 MATHEMATICS**

# Chapter 7: Cubes and Cube Roots

*Worksheet | Total Marks: 20 | Time: 45 minutes*

## SECTION A: Multiple Choice Questions (1 mark each) [5 marks]

**Q1.** The cube of -5 is: **[1 mark]**

(a) 125 (b) -125 (c) 15 (d) -15

**Q2.** Which is a perfect cube? **[1 mark]**

(a) 400 (b) 216 (c) 500 (d) 144

**Q3.** $\sqrt[3]{(0.027)}$ equals: **[1 mark]**

(a) 0.3 (b) 0.03 (c) 3 (d) 0.9

**Q4.** The cube root of -1000 is: **[1 mark]**

(a) 100 (b) -100 (c) 10 (d) -10

**Q5.** How many times must 12 be multiplied to get a perfect cube? **[1 mark]**

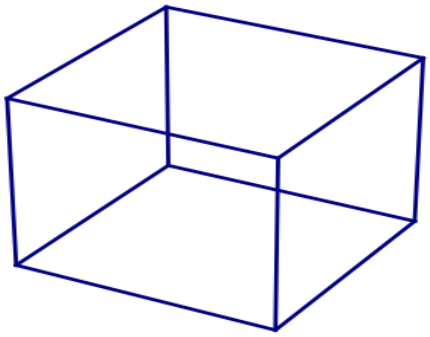
(a) 2 (c) 12 is already a perfect cube

(b) 3 (d) 1

## SECTION B: Short Answer Questions (2 marks each) [6 marks]

**Q6.** The diagram shows a cube. If the volume is 729 $cm^3$, find the side of the cube. Also find its total surface area. **[2 marks]**

A Cube



**Q7.** Check if 1728 is a perfect cube using prime factorisation. If yes, find its cube root. **[2 marks]**

**Q8.** Find the smallest number by which 392 must be multiplied to get a perfect cube. **[2 marks]**

## SECTION C: Long Answer Questions (3 marks each) [6 marks]

**Q9.** Find the smallest number by which 13720 must be divided to make it a perfect cube. Also find the cube root of the resulting number. Show complete prime factorisation. **[3 marks]**

**Q10.** The volumes of three cubes are 125 $cm^3$, 216 $cm^3$, and 343 $cm^3$. Find their sides. Now find the side of a larger cube whose volume equals the sum of volumes of these three cubes. **[3 marks]**

## SECTION D: Case Study (3 marks)

**Case Study: Packing Boxes**

A warehouse stores small cubic boxes of side 5 cm inside large cubic containers. The warehouse manager wants to stack the boxes perfectly (no empty space). He has containers of volume 27,000 $cm^3$, 64,000 $cm^3$, and 125,000 $cm^3$.

**Qi.** Find the side of each container. **[1 mark]**

**Qii.** How many small boxes can fit in the smallest container? **[1 mark]**

**Qiii.** What is the ratio of the number of boxes in the three containers? **[1 mark]**