

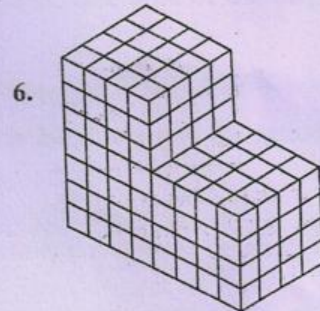
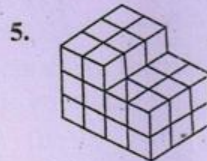
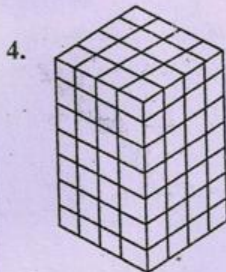
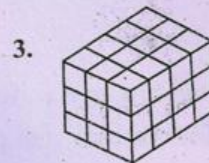
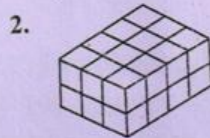
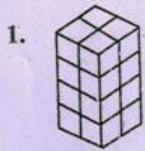
JB Academy, Faizabad
Mathematics Worksheet Class 8th

Count the cubes. There are 30, so the volume of the cuboid is 30 cm^3 .

Think $2 \times 5 = 10$ cubes in one layer. There are 3 such layers. So the total number of cubes is 30.

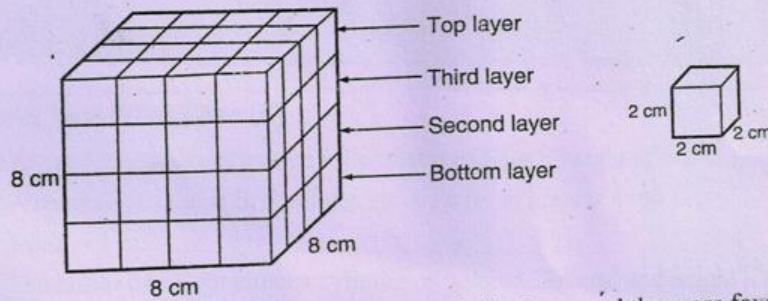
Test your understanding

These objects are made of centimetre cubes. Find the volume of each object.



7. Draw a cube of side 8 cm. How many cubes of side 2 cm would be needed to fill the same space?

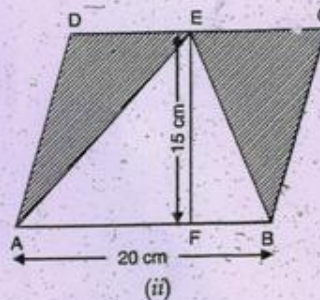
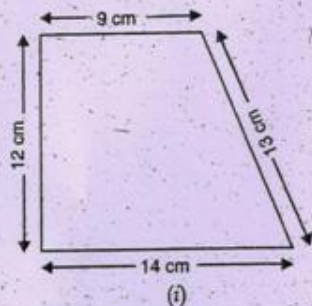
Sol.



The bottom layer requires 4×4 , i.e., 16 cubes of side 2 cm, and there are four layers altogether. Therefore **64 cubes** are required.

I. Mensuration-1

1. The area of a trapezium with parallel sides 10 cm and 6 cm and height 5 cm is
(a) 10 sq cm (b) 20 sq cm (c) 40 sq cm (d) 80 sq cm.
2. The area of the figure (i) given below is
(a) 48 sq cm (b) 68 sq cm (c) 108 sq cm (d) 138 sq cm.



3. The area of the shaded region in figure (ii) given above is
(a) 300 sq cm (b) 150 sq cm (c) 70 sq cm (d) 35 sq cm.

II. Mensuration-2

1. The edge of a dice is 2 cm long. What is its surface area?
(a) 6 cm (b) 6 sq cm (c) 24 sq cm (d) 24 cm².
2. The volume of a cuboid with dimensions l , b and h is
(a) lbh (b) $l + b + h$ (c) $\frac{1}{2}lbh$ (d) $2(l + b + h)$.
3. The volume of a closed right circular cylinder with radius 3 m and height 7 m is
(a) 196 cu m (b) 198 cu m (c) 188.5 sq m (d) 132 sq m.
4. If the diameter of a sphere is doubled, the ratio of the surface area of the original sphere to that of the new one is
(a) 1 : 2 (b) 2 : 1 (c) 1 : 4 (d) 4 : 1.
5. The radii of two cylinders are in the ratio 2 : 3 and their heights are in the ratio 5 : 3. What is the ratio of their volumes?
(a) 7 : 6 (b) 10 : 9 (c) 20 : 27 (d) 27 : 20.
6. A cylinder and a cone have the same radii of their bases and the same heights. Their respective volumes are in the ratio
(a) 1 : 3 (b) 3 : 1 (c) 2 : 1 (d) 1 : 2.
7. The area of the base of a cone is 180 sq cm. If the height of the cone is 8 cm, what is its volume?
(a) 480 cu cm (b) 1440 cu cm (c) 6188 cu cm (d) 22.5 cu cm.

8. Answer True (T) or False (F)

- (i) Area of four walls of a room = Perimeter of floor \times height of wall.
(ii) A cubical water tank in 4 m long. Its capacity in litres is 6400 L.
(iii) $1 \text{ cm}^3 = 1 \text{ mL}$.
(iv) The radius of a right circular cylinder of volume $27\pi \text{ cm}^3$ and height 3 cm is 9 cm.
(v) The volume of a cylinder whose area of the base is 35 cm^2 and its height is 12 cm is 210 cm^3 .

III Compound Interest

- The difference between the compound interest and the simple interest on ₹ 4,852 at 7% per annum for one year when the compound interest is payable annually is
(a) 0 (b) 12.50 (c) ₹ 250 (d) ₹ 262.50.
- The difference between the simple interest and the compound interest on ₹ 1,000 for 2 years at 10% when the compound interest is payable annually is
(a) ₹ 0 (b) ₹ 10 (c) ₹ 20 (d) ₹ 30.
- The difference between the simple interest and the compound interest on ₹ 2,500 for 2 years at 20% when the compound interest is payable annually is
(a) ₹ 50 (b) ₹ 70 (c) ₹ 100 (d) ₹ 200.
- The compound interest on ₹ 4,000 lent for 2 years at 5% per annum when the compound interest is payable annually is
(a) ₹ 390 (b) ₹ 410 (c) ₹ 450 (d) ₹ 480.
- A lends ₹ 1068 at 6% per annum, compound interest being payable annually, and B lends the same sum at the same rate per annum, but the compound interest is payable half-yearly. Who is the gainer at the end of one year?
(a) A (b) B
(c) both A and B are equal gainers (d) neither A nor B.
- Ram lent ₹ 2,000 at 10% per annum, compound interest being payable annually, while Shyam lent ₹ 2,000 at 10% per annum but the compound interest is payable half-yearly. Who gains more and by how much after one year?
(a) Shyam gains ₹ 5. (b) Shyam gains ₹ 20.
(c) Ram and Shyam gain equally. (d) Ram gains ₹ 20.
- If the interest on ₹ 2,000 at 5% compound interest in the first year is ₹ 100, what will be the interest in the second year if the compound interest is payable annually?
(a) ₹ 100 (b) ₹ 105 (c) ₹ 110 (d) ₹ 120.

IV Algebraic Expressions and Identities

- How many terms are there in a trinomial?
(a) one (b) two (c) three (d) more than three.
- The product of $-ab$, a^2b^3 and $-a^3b^2$ is
(a) $-a^3b^3$ (b) a^6b^6 (c) $-a^6b^6$ (d) a^3b^3 .
- The product of $\frac{1}{4}xyz$ and $-4xy^2$ is
(a) $2x^2y^2z$ (b) $-x^2y^3z$ (c) $16x^2y^3z^2$ (d) $-\frac{1}{16}yz$.
- $(9x^2 + 25 - 30x)$ is the square of
(a) $3x + 5$ (b) $3x^2 - 25$ (c) $3x - 5$ (d) $-3x - 5$.
- If $x + \frac{1}{x} = 2$, then $x^2 + \frac{1}{x^2}$ is
(a) 0 (b) 2 (c) 4 (d) 8.

V. Comparing Quantities

- Profit or loss per cent is calculated on
(a) selling price (b) cost price (c) discount (d) brokerage.
- Discount per cent is calculated on
(a) marked price (b) cost price (c) gain (d) loss.
- If S.P. of an article is ₹ 374 and the discount is ₹ 24, then the M.P. of the article is
(a) ₹ 398 (b) ₹ 350 (c) ₹ 464 (d) ₹ 362.
- What will be the amount of discount if an article marked at ₹ 460 is sold at a discount of 15%?
(a) ₹ 89 (b) ₹ 83 (c) ₹ 79 (d) ₹ 69.
- After allowing a discount of 10% on the marked price of an article, a shopkeeper still gains 26%. The marked price of the article exceeds the cost price by
(a) 10% (b) 26% (c) 35% (d) 40%.
- Swapna paid ₹ 31.50 as sales tax on a shirt worth ₹ 450. What is the rate of sales tax?
(a) 10% (b) 8% (c) 7% (d) 5%.
- A man buys a trousers for ₹ 892.50, which includes 5% sales tax. What is the marked price of the trousers?
(a) ₹ 937 (b) ₹ 850 (c) ₹ 897.50 (d) ₹ 887.50.
- A machine is listed at ₹ 750 with a discount of 10%. What additional discount must be offered to the customer to bring the net selling price to ₹ 648?
(a) 3% (b) 4% (c) 6% (d) 7%.

VI. Direct and Inverse Proportions

- x and y vary directly with each other. When x is 10, y is 15. Which of the following is not a possible pair of corresponding values of x and y ?
(a) 2, 3 (b) 8, 12 (c) 15, 20 (d) 25, 37.5.
- a and b vary inversely with each other. When a is 10, b is 6. Which of the following is not a possible pair of corresponding values of a and b ?
(a) 12, 5 (b) 15, 4 (c) 25, 2.4 (d) 45, 13.
- A truck needs 54 litres of diesel for covering a distance of 297 km. The diesel required by the truck to cover a distance of 550 km is
(a) 100 litres (b) 50 litres (c) 25.16 litres (d) 25 litres.
- A car can cover a distance of 210 km in 5 hours. It will cover a distance of 546 km in
(a) 13 hours (b) $12\frac{1}{2}$ hours (c) 12 hours (d) $11\frac{1}{3}$.
- If Ram can complete a work in 18 days, how much work will he do in 6 days?
(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{1}{4}$ (d) $\frac{1}{6}$.
- A is twice as good a workman as B and together they finish a piece of work in 14 days. In how many days can A alone finish the work?
(a) 11 (b) 21 (c) 28 (d) 42.
- Pipe A can fill a cistern in 4 hours, while pipe B can empty it in 6 hours. If both the pipes are opened together at the same time when the tank is empty, the number of hours taken by them to fill it is
(a) 6 (b) 8 (c) 10 (d) 12.