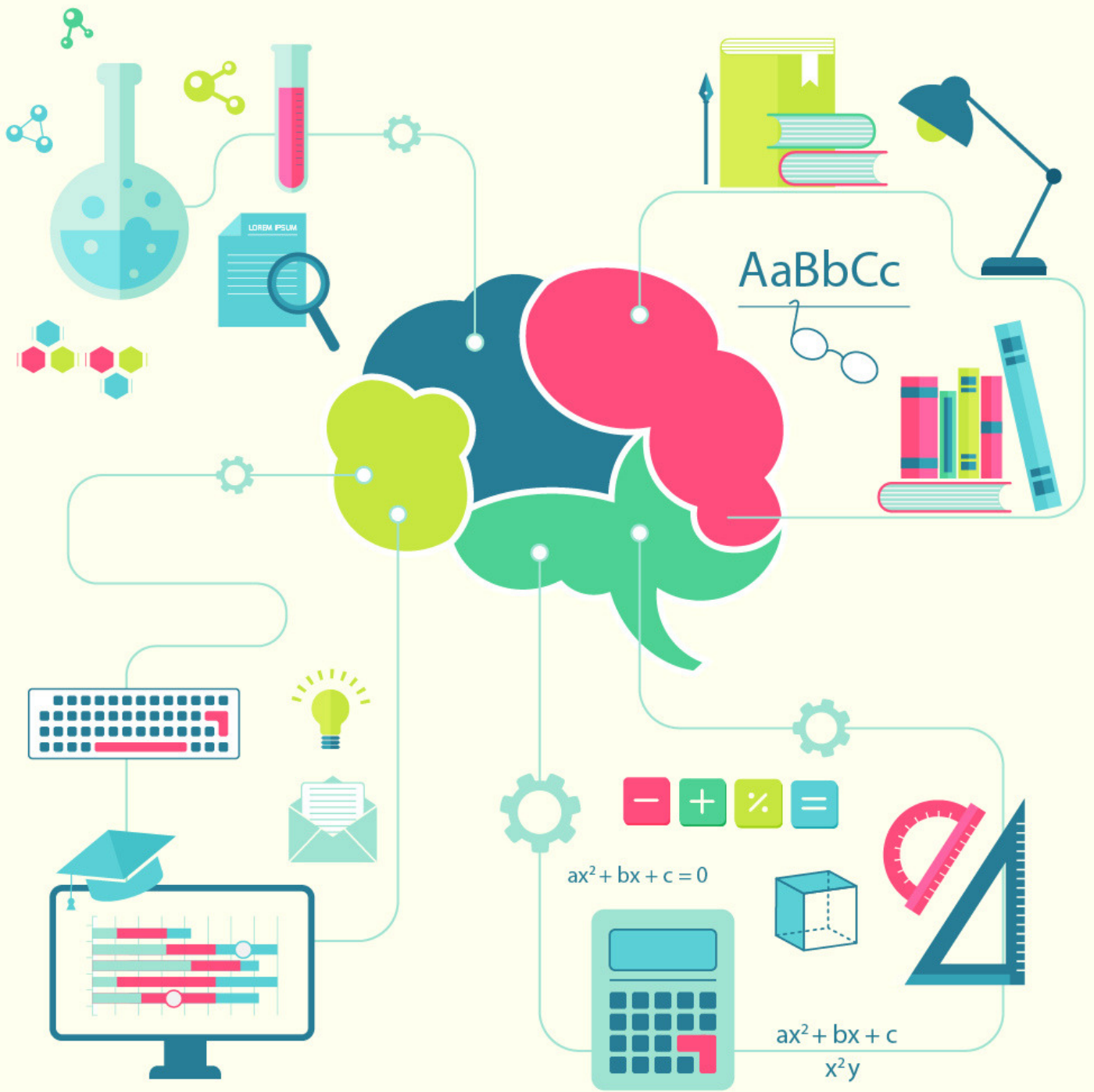




CAT Questions On Cubes

19 July 2018





TAKE CRACKU'S FREE CAT MOCK

Question 1: A cube of side length 8 cm is taken and small cubes of 2 cm length are cut along all the eight corners of the cube. By what percentage does the total surface area of the cube changes?

- a) 5%
- b) 12.5%
- c) 20%
- d) None of these

Question 2: A cuboid of dimensions 45cm, 75cm and 90cm is to be divided into identical cubes of side X cm. What is the maximum possible value of X?

- a) 10
- b) 12
- c) 15
- d) 17

Question 3: Four cubes are placed adjacently in a row. What is the ratio of the surface area of the new cuboid to the total surface area of the four cubes?

- a) 9/16
- b) 3/4
- c) 16/9
- d) 4/3

Question 4: A cube of side 3 cm is cut into smaller cubes of side 1 cm. What is the ratio of Total surface area of the larger cube and the sum of the total surfaces of all the smaller cubes?

- a) 1:1
- b) 1:2
- c) 1:3
- d) 1:4

CAT 2018 preparation tips for beginners

E book GK (Download PDF)

IIFT Free Previous Papers

Download Our App





SOLVE PAST CAT PAPERS

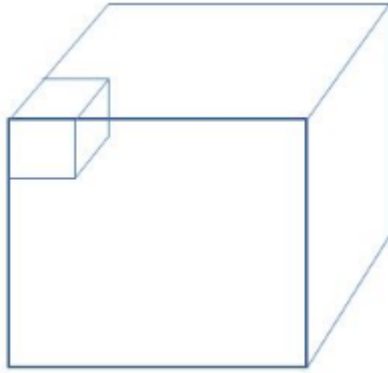
Question 5: A cube of side n is painted green on all its sides. It is then cut into n^3 identical cubes. How many of the smaller cubes will have three of its sides painted?

- a) 4
- b) 6
- c) 8
- d) cannot be determined

Answers & Solutions:

1) Answer (D)

Each cube that is cut had three sides exposed outside and three sides not exposed when it was in the bigger cube.



2) Answer (C)

As it is given that the smaller cubes to be formed are to be identical and for the side of it to be maximum it has to be the HCF of the dimensions of the given cuboid.

HCF of 45, 75 and 90 is 15.

Hence the maximum possible value of the side of the smaller cubes is 15.

3) Answer (B)

Let a be the side of the small cuboid. Surface area of one cuboid $= 6a^2$

Thus, the total surface area of the 4 cubes $= 4 \times 6a^2 = 24a^2$

The side of the new cuboid formed is a , a and $4a$. The total surface area of the new cuboid formed $= 2(a^2 + 4a^2 + 4a^2) = 18a^2$

Thus, the surface area of the new cuboid to that of the 4 cubes $= 18a^2 / 24a^2 = 3/4$

CAT Questions on circular motion

IIFT Free Previous Papers
Download Our App





TAKE CRACKU'S FREE CAT MOCK

4) Answer (C)

Total surface area of the larger cube = $6 \times 3 \times 3 = 54$.

Total surface area of a smaller cube = $6 \times 1 \times 1 = 6$.

The number of smaller cubes = $3 \times 3 \times 3 = 27$.

Sum of the total surface areas of all the smaller cubes = $6 \times 27 = 162$.

Thus the required ratio = $54:162 = 1:3$.

5) Answer (C)

Since, all the sides of the cube is painted, the cubes cut out from the corners will have three of its faces green. Since there are 8 corners for a cube, there will be 8 such cubes.

Previous Year CAT LR Questions

Tough Reading Comprehension Passages for CAT

Whatsapp 'CAT' to join in CAT Group
to this number (7661025559)

XAT Free Previous Papers
Download Our App

