

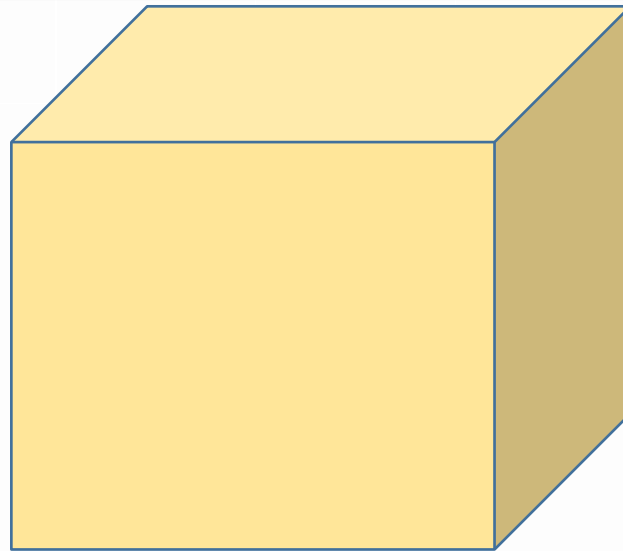
DICE & CUBE

ABOUT DICE

Dice is a cube. It has six faces like top , bottom , front , back , left and right.

OR

A dice is a three dimensional figure with 6 surfaces. It may be in form of a cube or a cuboid. After observing these figure, we have to find the opposite side of the dice.



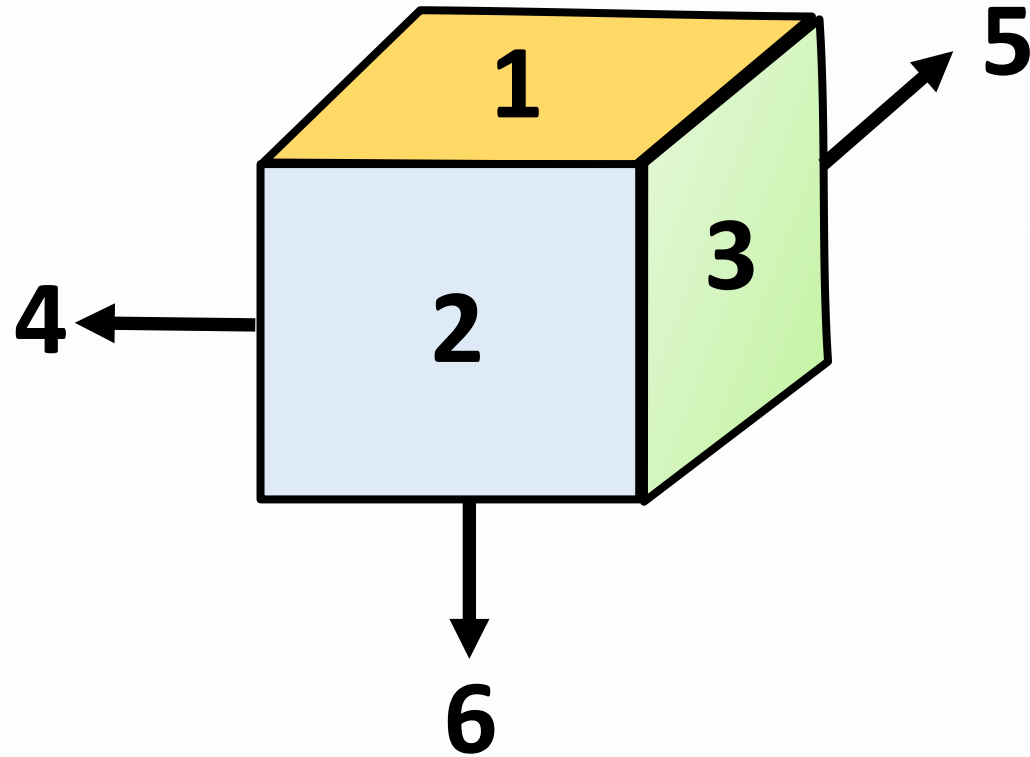
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graph TD; DICE[DICE] --> STANDARD[STANDARD DICE]; DICE --> ORDINARY[ORDINARY DICE];
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DICE

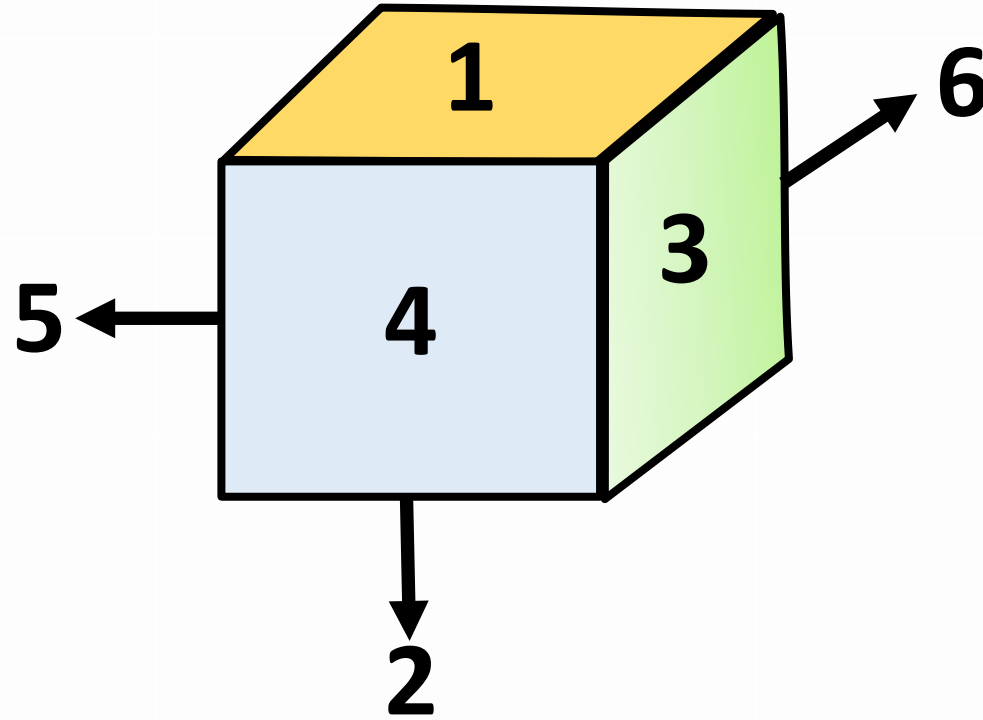
**STANDARD
DICE**

**ORDINARY
DICE**

(1) Standard dice : Only numbers are used here i.e. 1,2,3,4,5,6 and one more important property is opposite faces sum is 7, for example $1+6=7$ means 1 is opposite to 6 and so on .



(2) Ordinary Dice : Here numbers, letters colours and symbols can be used. Also if the sum the adjacent numbers is 7 then the dice is called Ordinary Dice



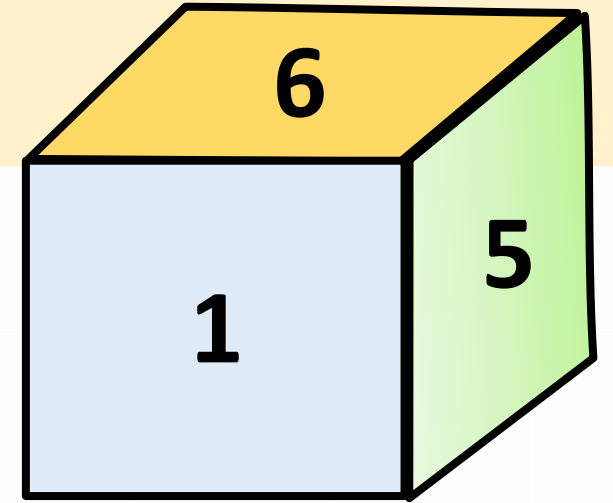
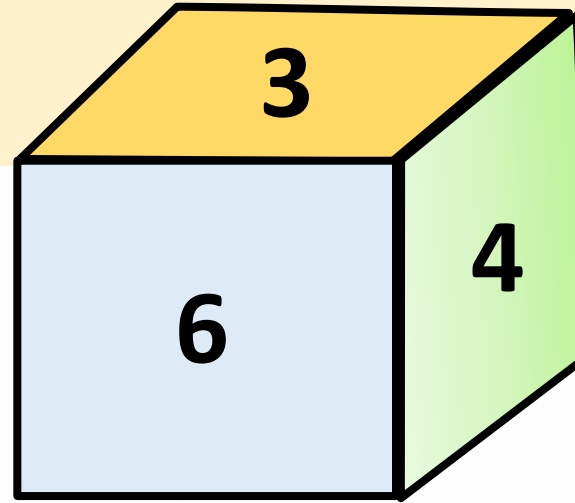
Q.1: Two positions of dice are shown. What will appear on the opposite to the face containing 5?

(A) 3

(B) 2

(C) 1

(D) 4



EXPLANATION

Ans.(A)

6	3	4
2	5	1

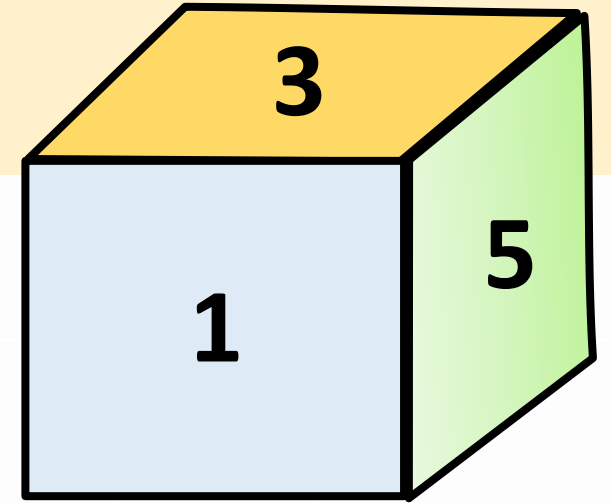
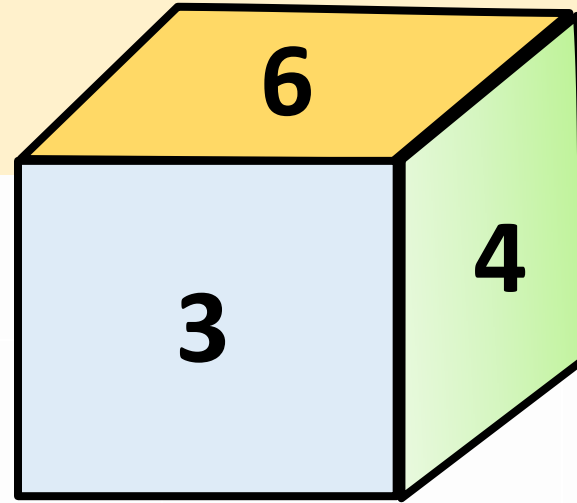
Q.2: Two positions of dice are shown. What will appear on the opposite to the face containing 3?

(A) 3

(B) 2

(C) 1

(D) 4



EXPLANATION

Ans.(B)

3	6	4
2	5	1

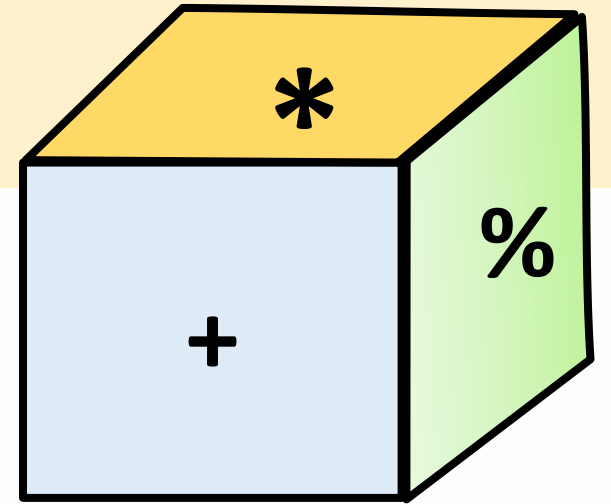
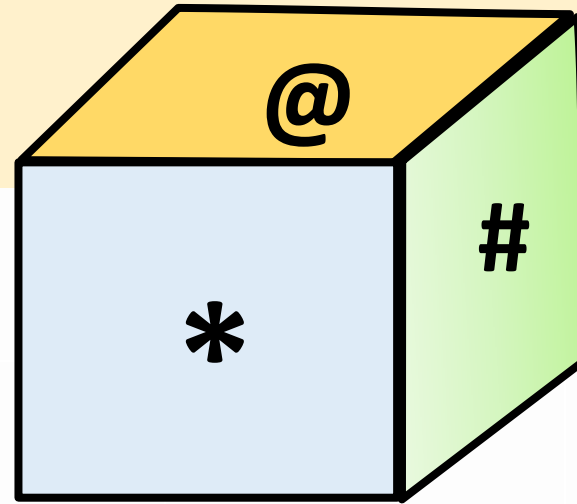
Q.3: Two positions of dice are shown. What will appear on the opposite to the face containing * ?

(A) @

(B) %

(C) \$

(D) CND



EXPLANATION

Ans.(D)

*	@	#
CND	%	+

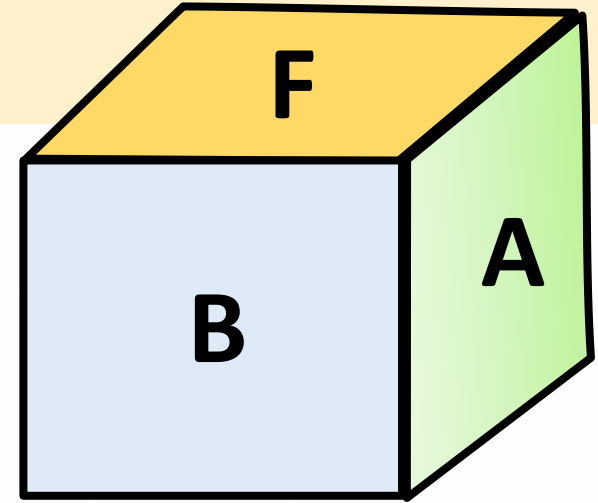
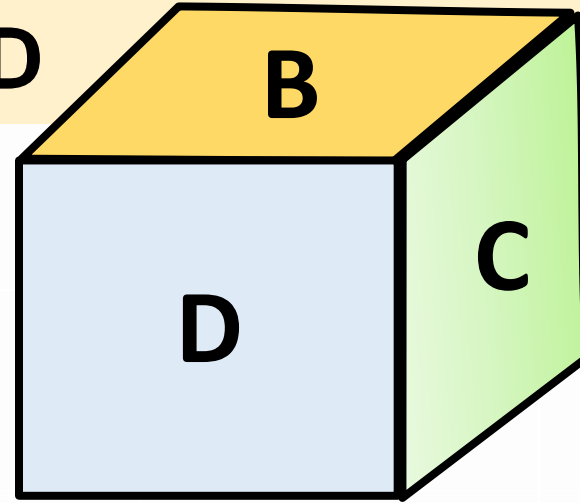
**Q.4: Two positions of dice are shown using A to F letters.
What will appear on the opposite to the face containing B?**

(A) F

(B) C

(C) E

(D) CND



EXPLANATION

Ans.(C)

B	C	D
E	F	A

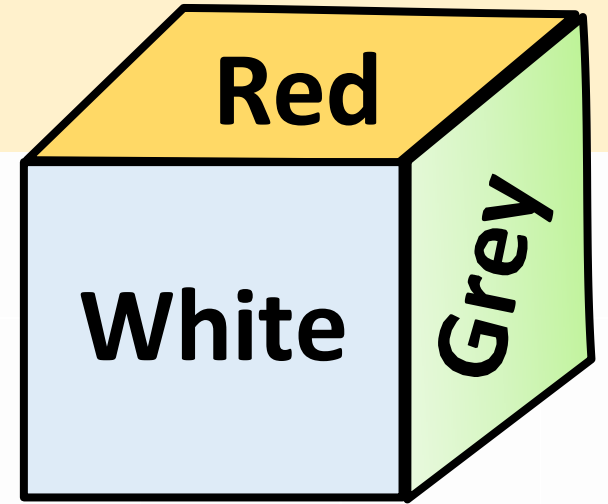
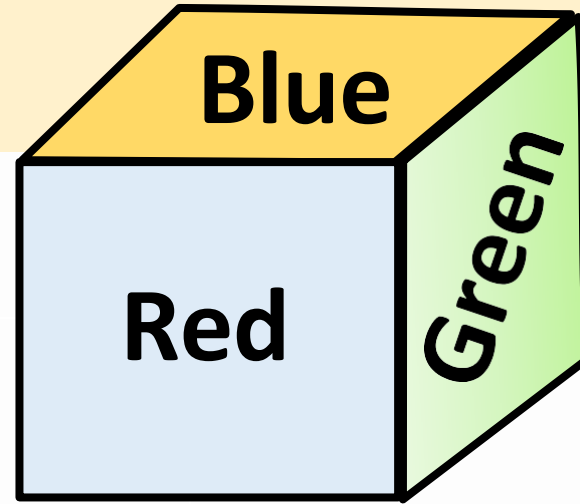
Q.5: Two positions of dice are shown. What will appear on the opposite to the face containing Brown?

(A) Blue

(B) White

(C) Red

(D) Green



EXPLANATION

Ans.(C)

RED	BLUE	GREEN
BROWN	GREY	WHITE

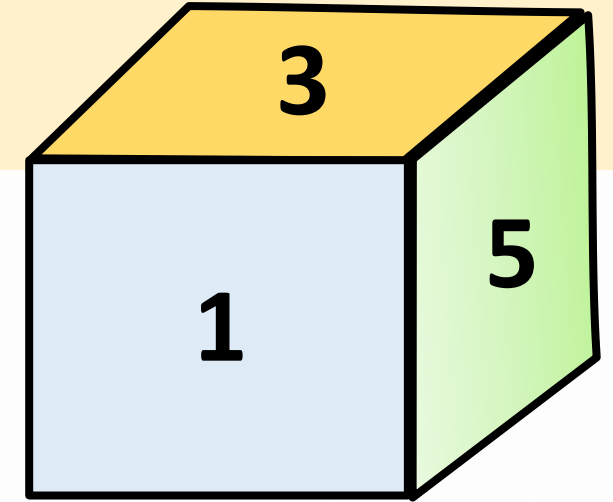
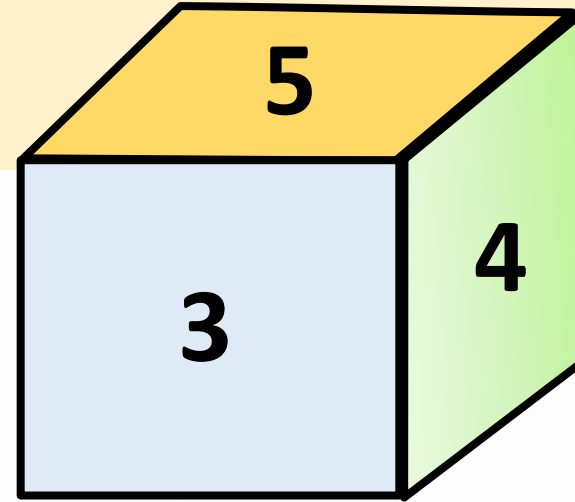
Q.6: Two positions of dice are shown. What will appear on the opposite to the face containing 4?

(A) 3

(B) 2

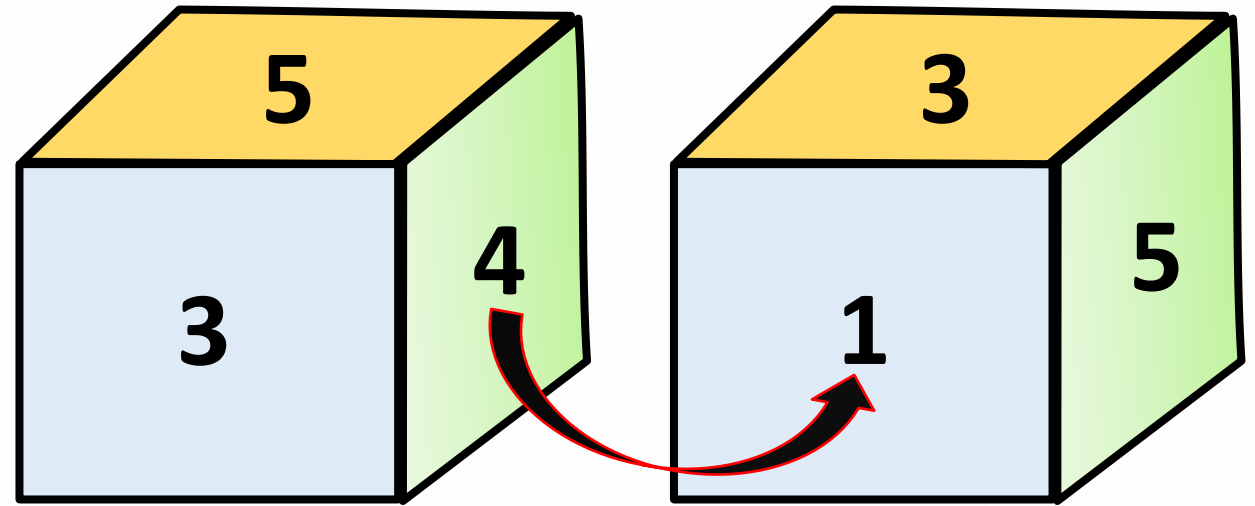
(C) 1

(D) 5



EXPLANATION

Ans.(C)



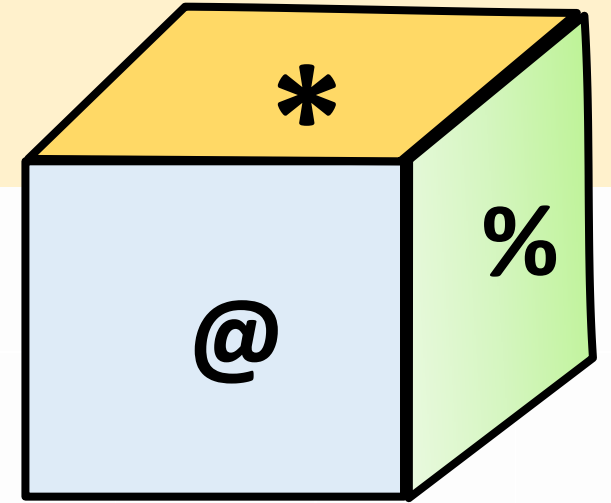
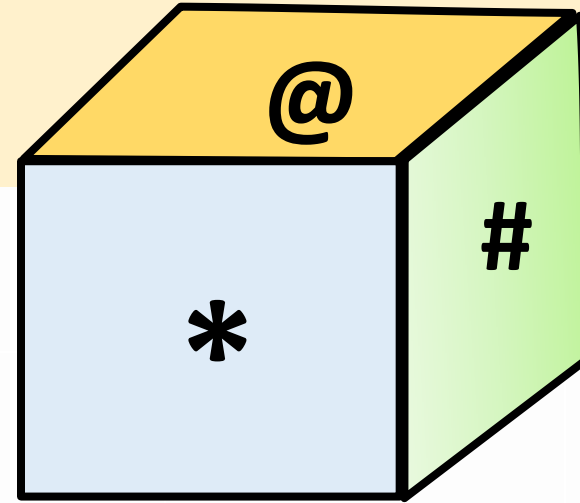
Q.7: Two positions of dice are shown. What will appear on the opposite to the face containing * ?

(A) @

(B) %

(C) \$

(D) CND



EXPLANATION

Ans.(D)

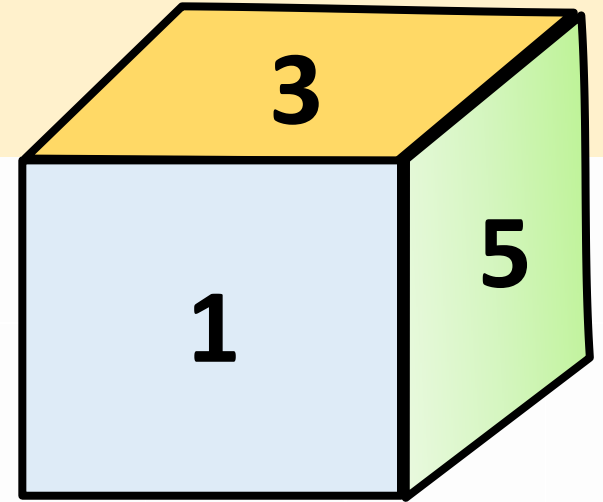
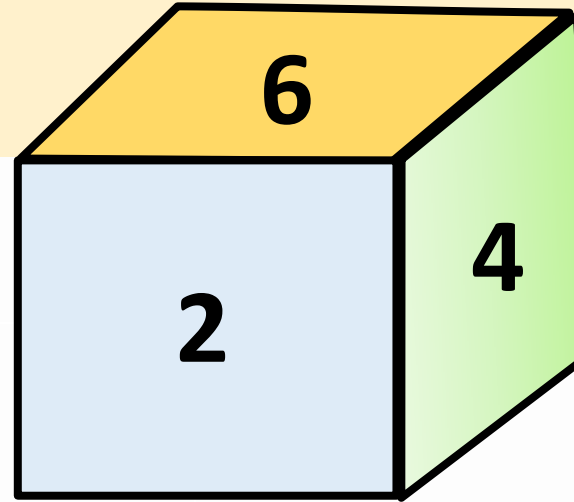
Q.8: Two positions of dice are shown. What will appear on the opposite to the face containing 6?

(A) 3

(B) 5

(C) 1

(D) 2



EXPLANATION

Ans.(C) There is no common therefore we can consider it as a standard dice

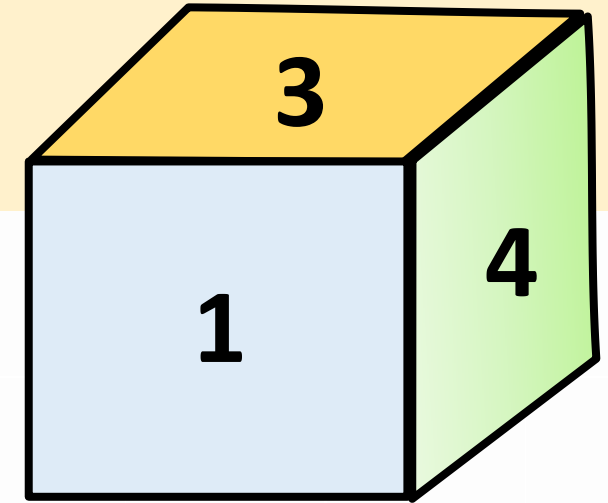
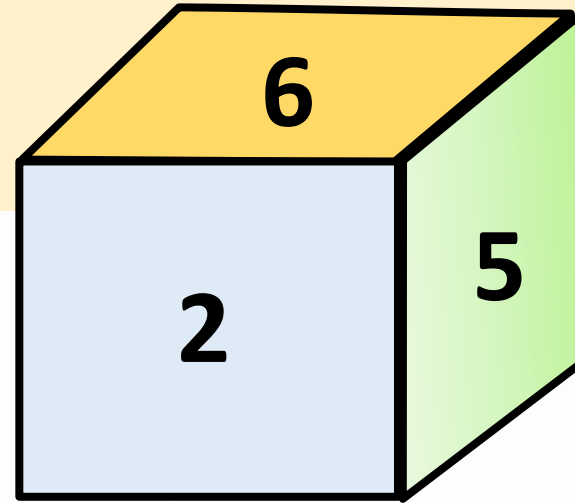
Q.9: Two positions of dice are shown. What will appear on the opposite to the face containing 6?

(A) 3

(B) 5

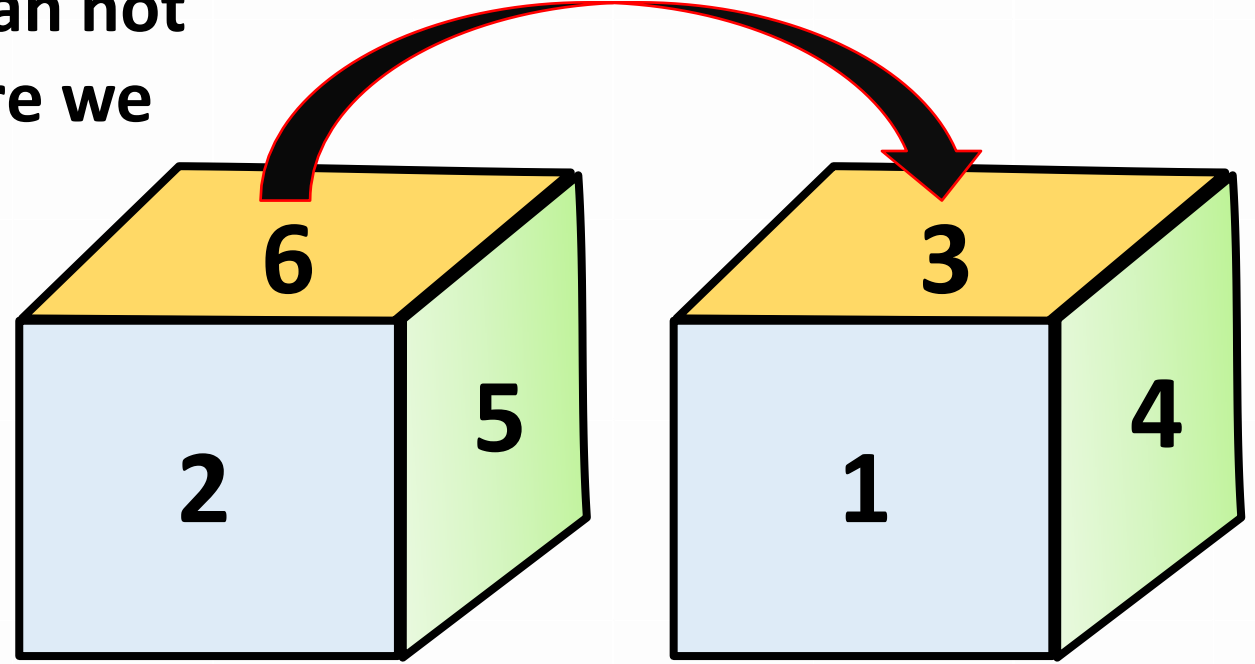
(C) 1

(D) 2



EXPLANATION

Ans.(1) There is no common and we can not consider it as a standard dice therefore we can answer on position basis



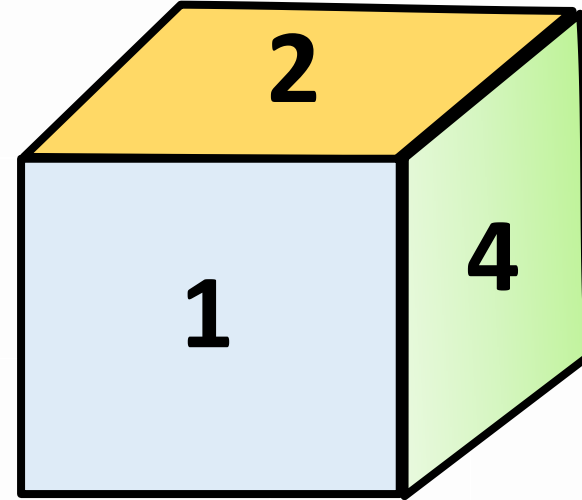
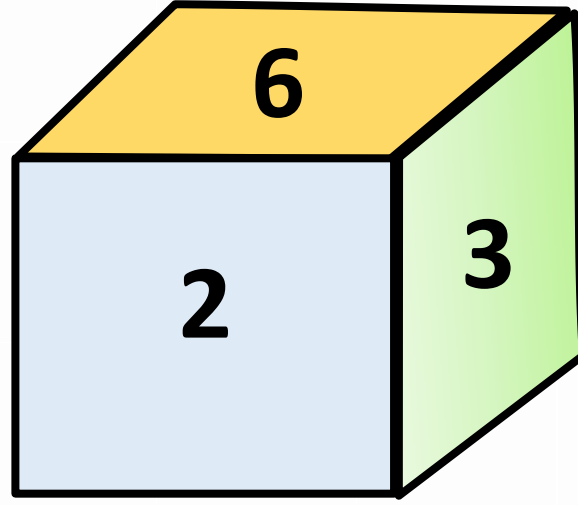
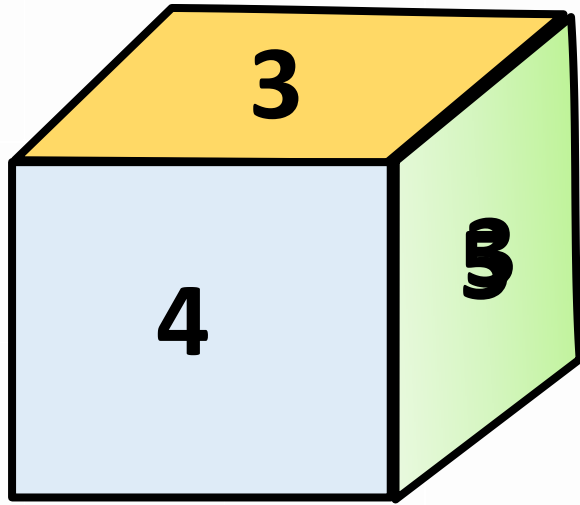
Q.10: Three positions of dice are shown. What will appear on the opposite to the face containing 2?

(A) 3

(B) 5

(C) 1

(D) 6



EXPLANATION

Ans.(B) As 6, 3, 4, and 1 are the neighbours of 2, therefore 5 is opposite of 2

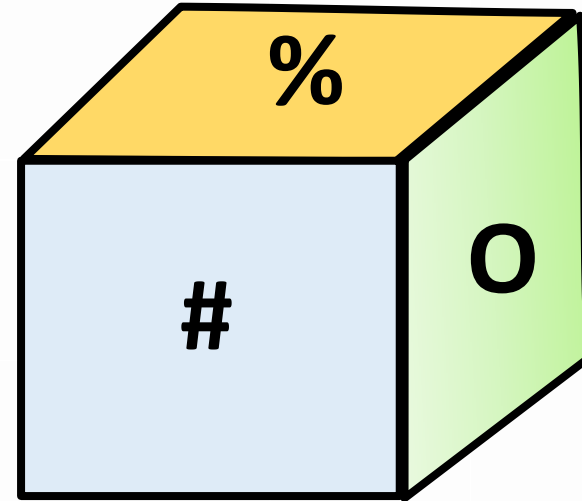
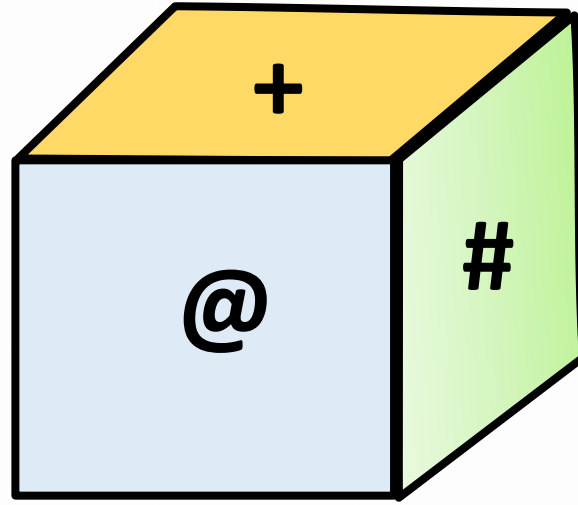
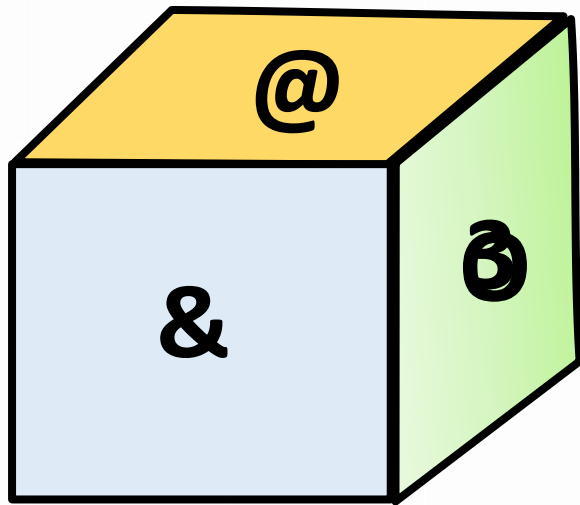
Q.11: Three positions of dice are shown. What will appear on the opposite to the face containing O?

(A) #

(B) +

(C) %

(D) &



EXPLANATION

Ans.(B) As @, &, %, and # are the neighbours of O, therefore + is opposite of O

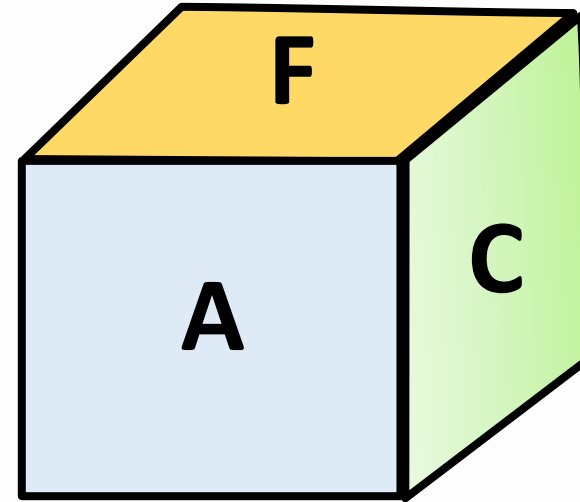
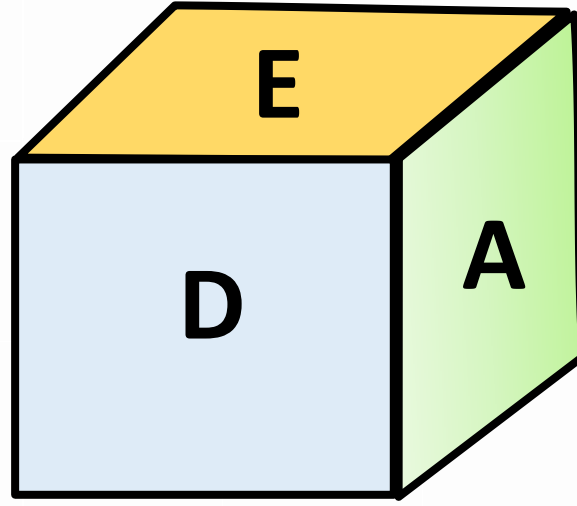
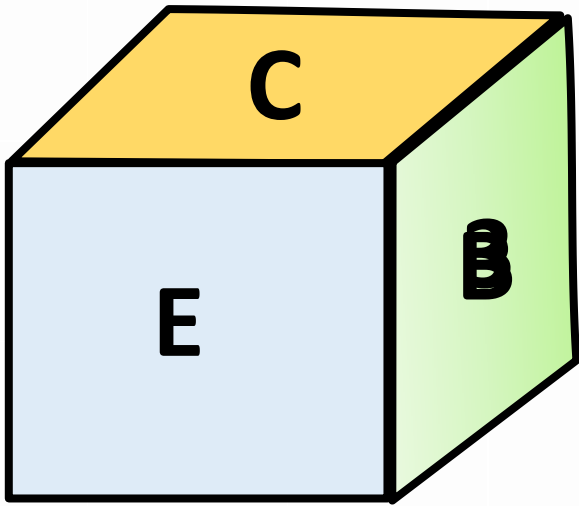
Q.12: Three positions of dice are shown. What will appear on the opposite to the face containing A?

(A) C

(B) D

(C) E

(D) B



EXPLANATION

Ans.(D) As D, E, F, and C are the neighbours of A, therefore B is opposite of A

C B E

D A F

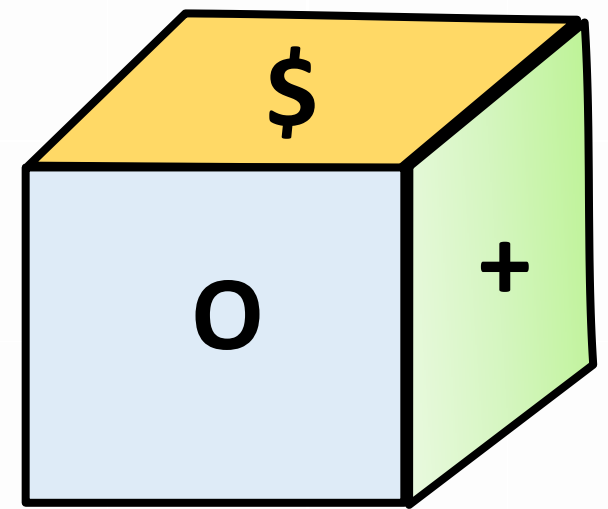
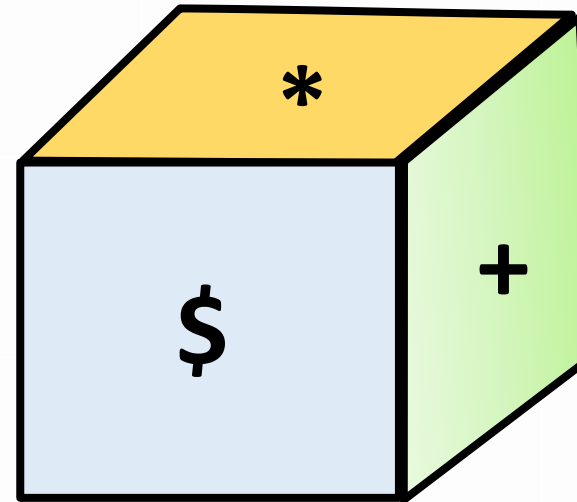
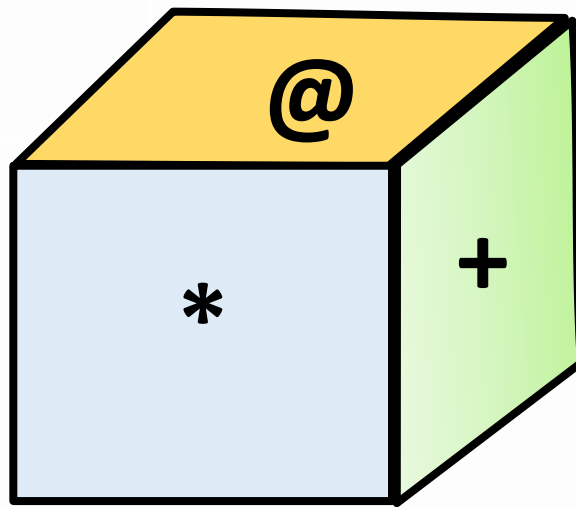
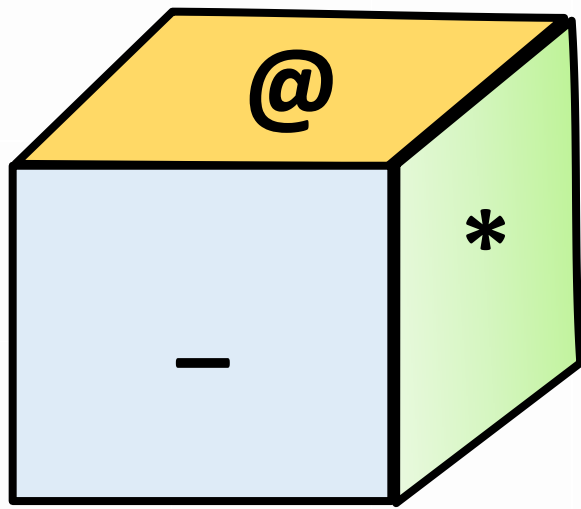
Q.13: Four positions of dice are shown. What will appear on the opposite to the face containing O?

(A) *

(B) \$

(C) @

(D) +



EXPLANATION

Ans.(A)

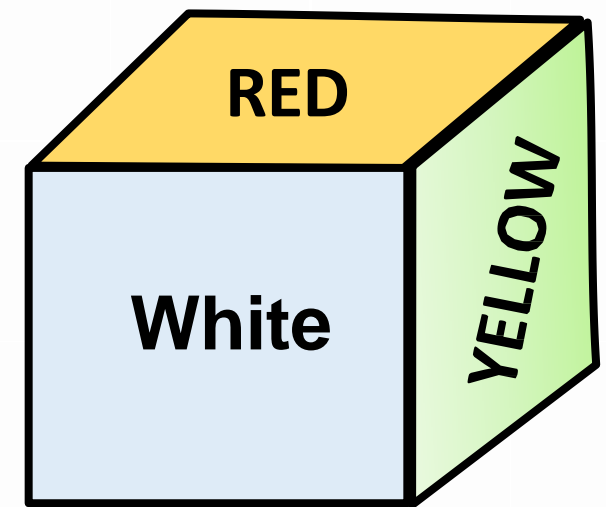
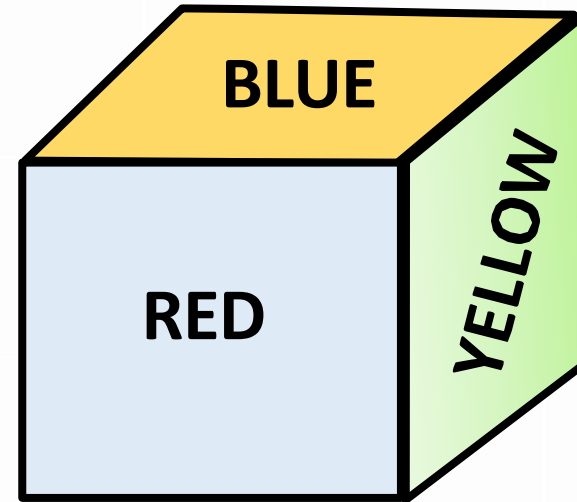
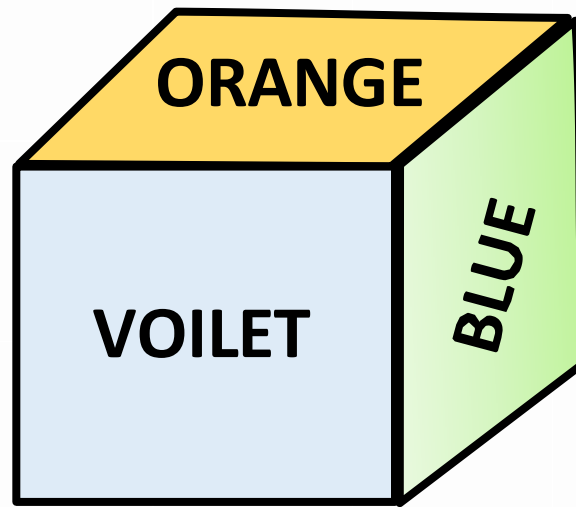
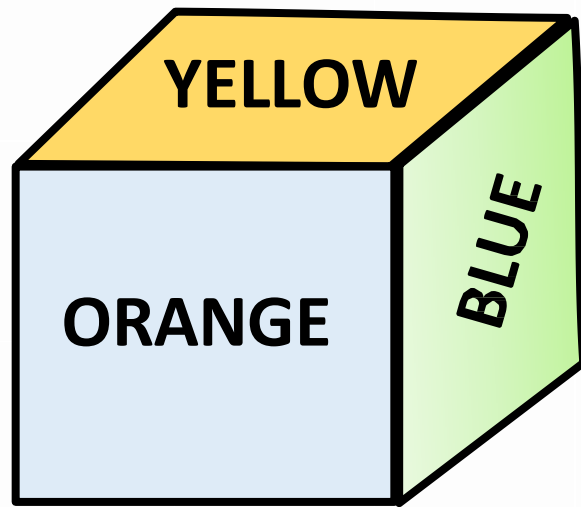
Q.14: From the four positions of a dice given below, find the colour which is opposite to Violet ?

(A) Red

(B) Yellow

(C) Blue

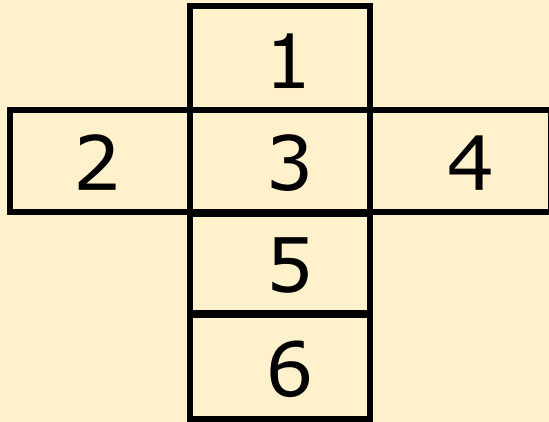
(D) White



EXPLANATION

Ans.(B)

OPPOSITE FACES IN OPEN DICE

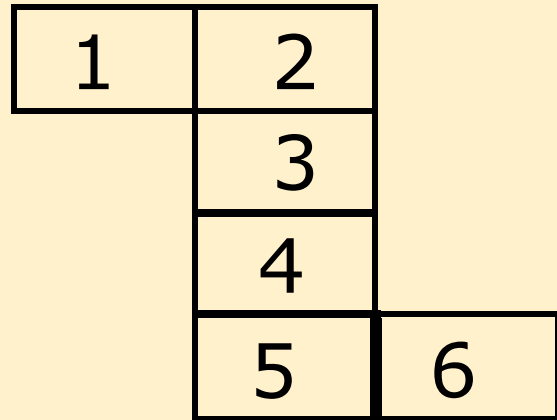


(1) In this case:

1 lies opposite 5

2 lies opposite 4

3 lies opposite 6.



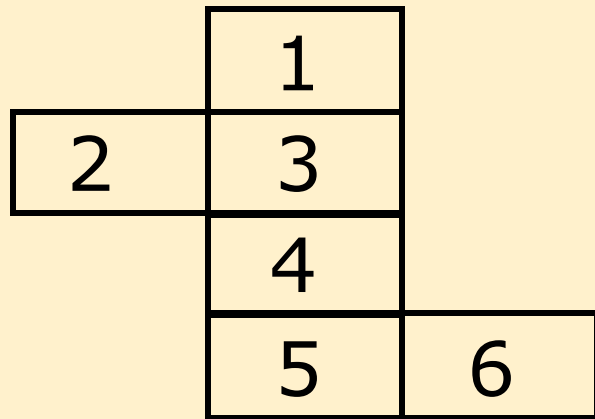
(2) In this case:

1 lies opposite 6

2 lies opposite 4

3 lies opposite 5.

OPPOSITE FACES IN OPEN DICE



(3) In this case:

1 lies opposite 4

2 lies opposite 6

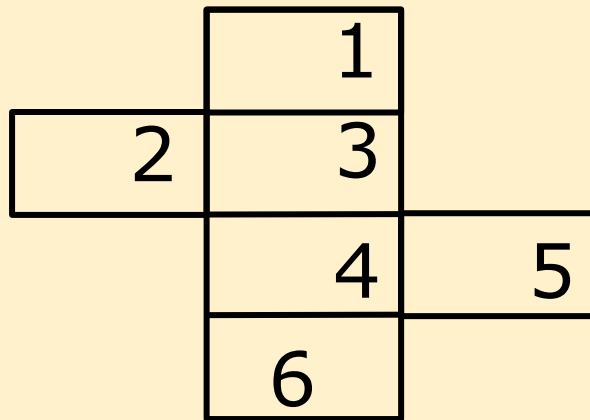
3 lies opposite 5.

(4) In this case:

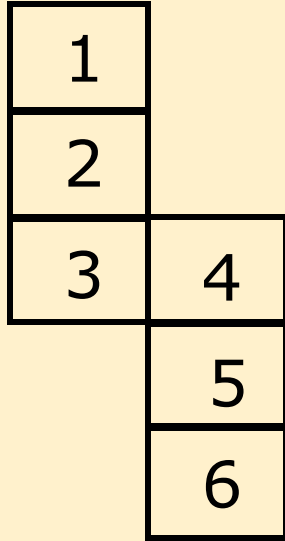
1 lies opposite 4

2 lies opposite 5

3 lies opposite 6.



OPPOSITE FACES IN OPEN DICE

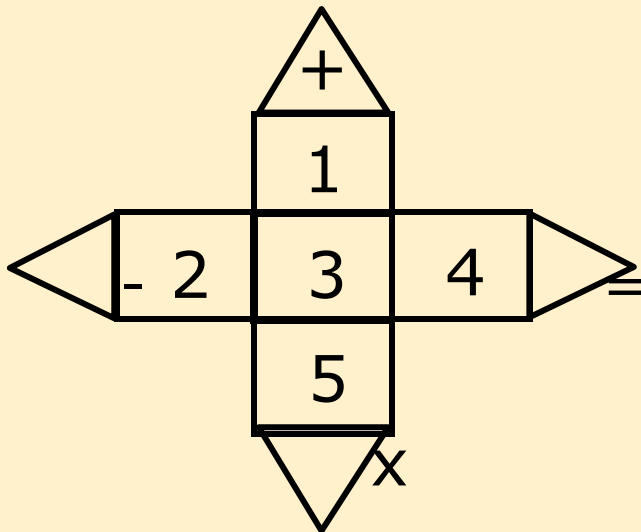


(5) In this case:

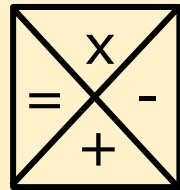
1 lies opposite 3

2 lies opposite 5

4 lies opposite 6.



(6) In this case:

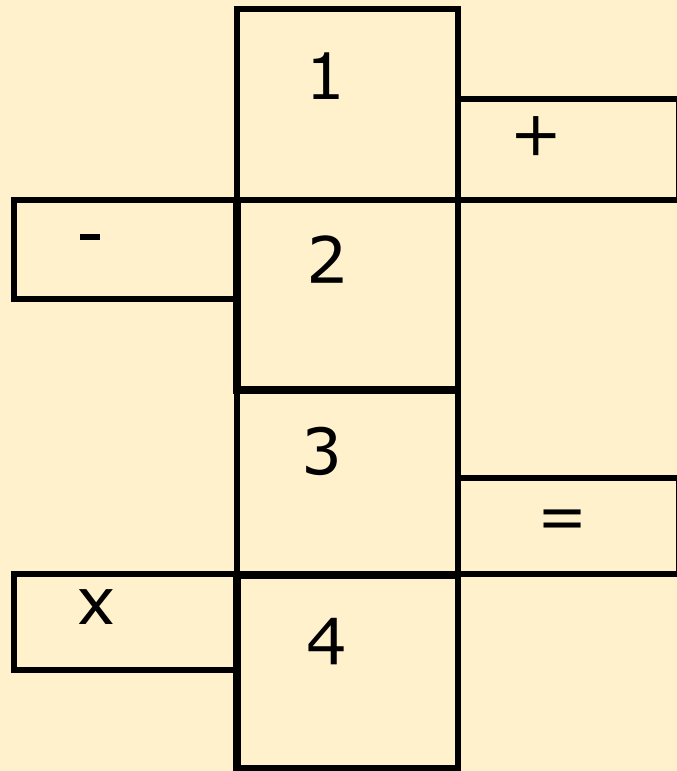


will be the one of the faces
of the cube and it lies opposite 3

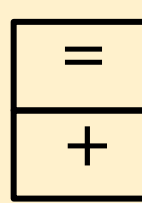
2 lies opposite 4

1 lies opposite 5.

OPPOSITE FACES IN OPEN DICE



(7) In this case:

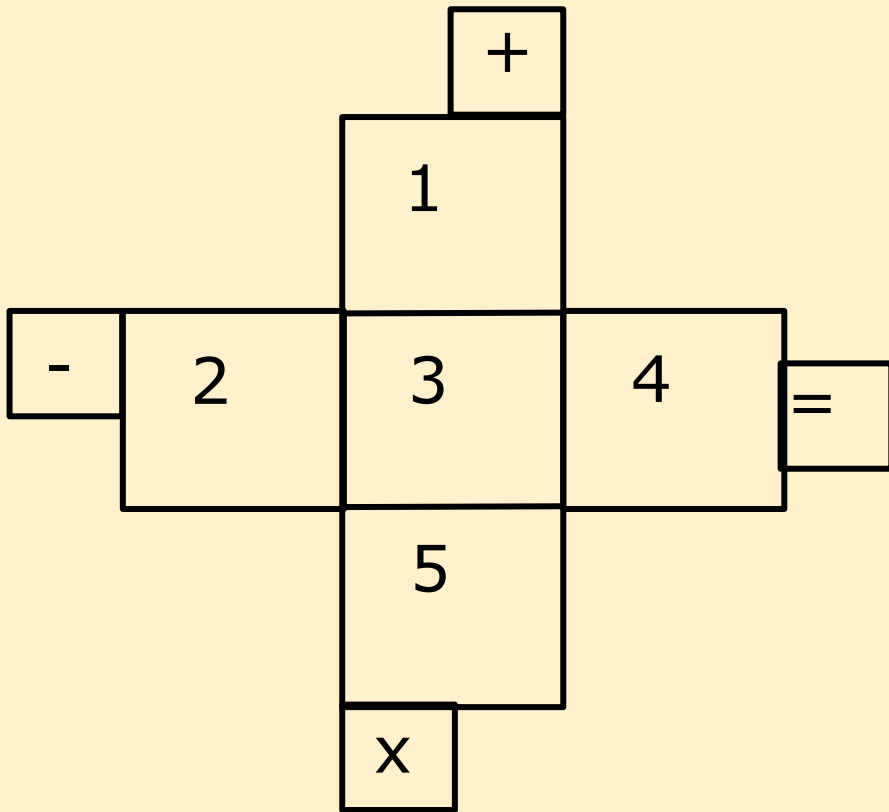


and are two faces of the cube that lie opposite to each other.

2 lies opposite 4

1 lies opposite 3

OPPOSITE FACES IN OPEN DICE



(8) In this case:

-	+
x	=

will be the one of the faces of the cube and it lies opposite 3

2 lies opposite 4

1 lies opposite 5.

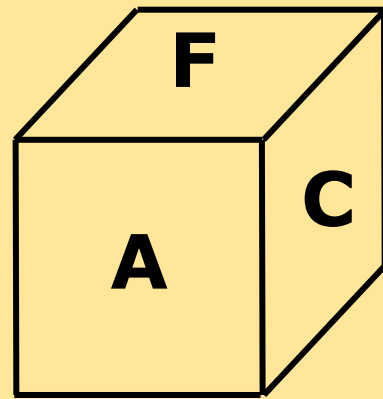
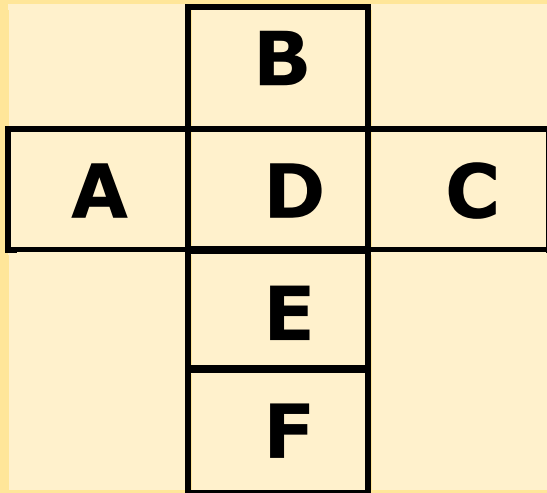
Q.15: The figure given on the left hand side in each of the following questions is folded to form a box. Choose from the alternatives (1), (2), (3) and (4) the boxes that is similar to the box formed.

(A) 1, 2 and 3 only

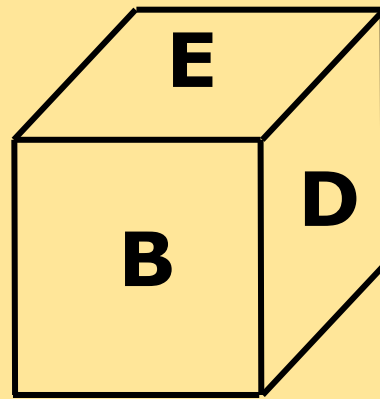
(B) 2 and 4 only

(C) 2 and 1 only

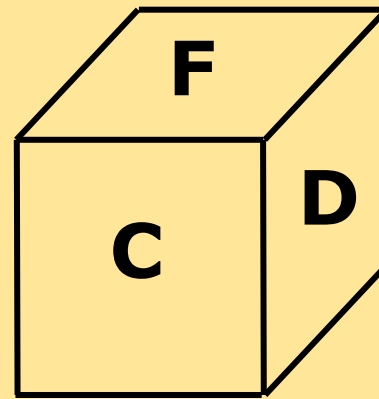
(D) only 4



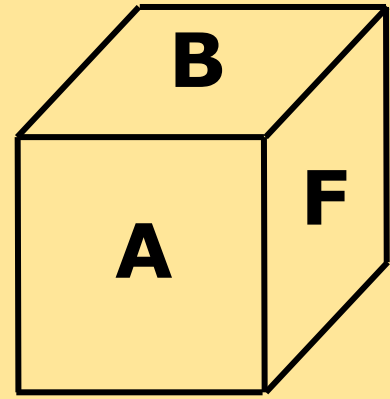
1



2



3



4

EXPLANATION

Ans.(D)

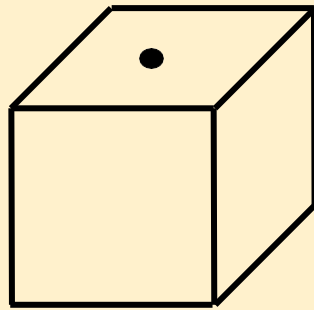
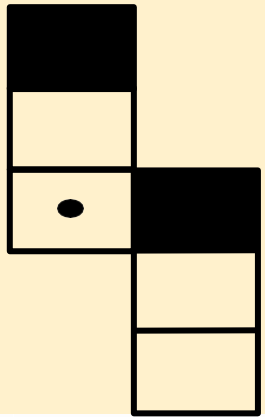
Q.16: The figure given on the left hand side in each of the following questions is folded to form a box. Choose from the alternatives (1), (2), (3) and (4) the box can be formed.

(A) 2 and 3 only

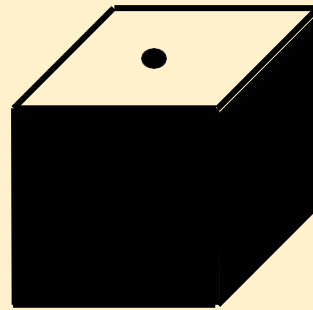
(B) 1, 3 and 4 only

(C) 2 and 4 only

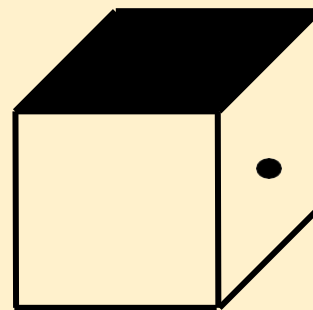
(D) 1 and 4 only



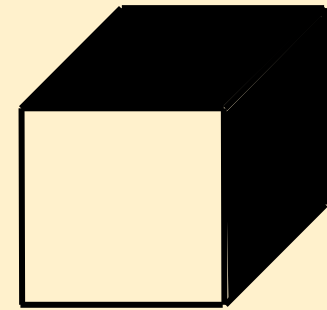
1



2



3



4

EXPLANATION

Ans.(B) 1, 3 and 4 only

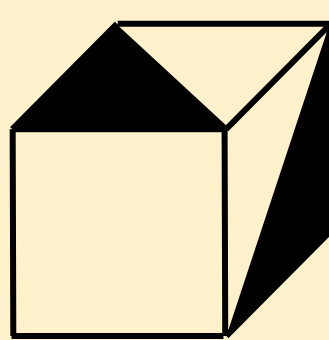
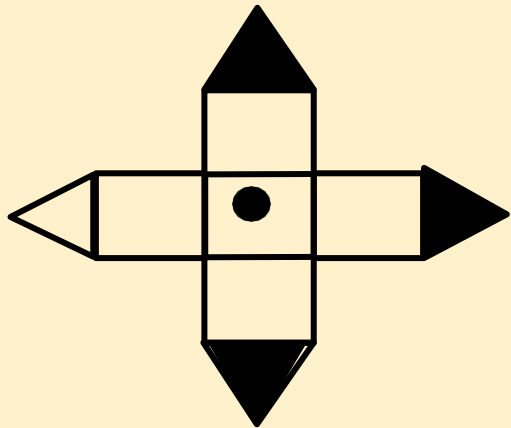
Q. 7: The figure given on the left hand side in each of the following questions is folded to form a box. Choose from the alternatives (1), (2), (3) and (4) the box that can be formed.

(A) Only 2

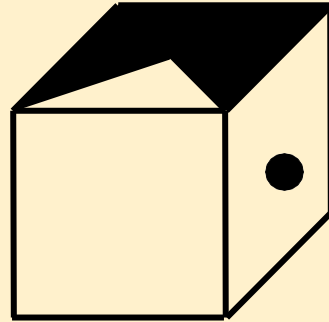
(B) 2, 3 and 4

(C) Only 3

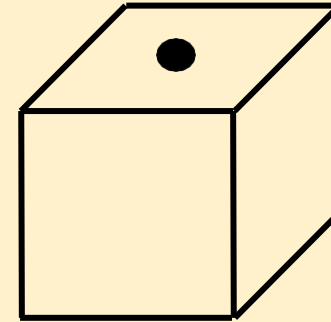
(D) 3 and 4 only



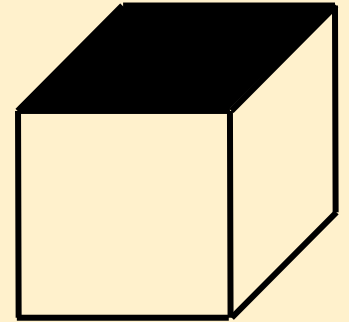
1



2

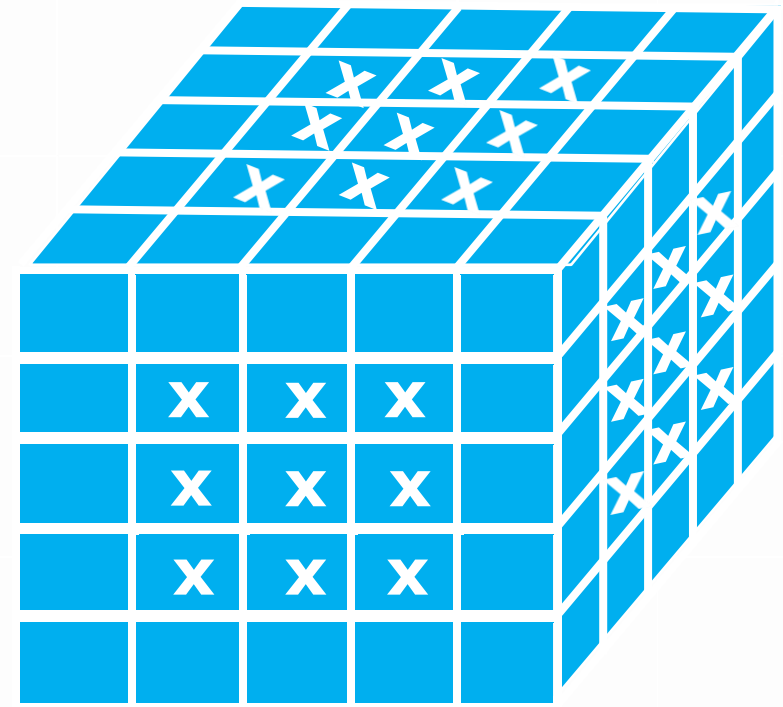


3



4

CUBE



ABOUT CUBE

In a cube there are six faces in each.

A cube is a three dimensional figure, having 8 corners, 6 surfaces and 12 edges.

In a cube length, breadth and height are same while in cuboid these are different.

In a cube the number of unit cubes = $(\text{side})^3$.

EXAMPLE

A cube of each side 4 cm, has been painted black, blue and red on pairs of opposite faces. It is then cut into small cubes of each side 1 cm.

The following questions and answers are based on the information give above –

Q.1. How many small cubes will be there ?

A. 64

B. 48

C. 16

D. 24

EXPLANATION

Sol.(1)

$$n = 4/1 = 4$$

$$\begin{aligned}\text{No. of small cubes} &= n^3 \\ &= 64\end{aligned}$$

EXAMPLE

A cube of each side 4 cm, has been painted black, blue and red on pairs of opposite faces. It is then cut into small cubes of each side 1 cm.

The following questions and answers are based on the information give above –

Q.2. How many small cubes will have three faces painted ?

A. 54

B. 8

C. 16

D.24

EXPLANATION

Sol.(2) Answer is 8

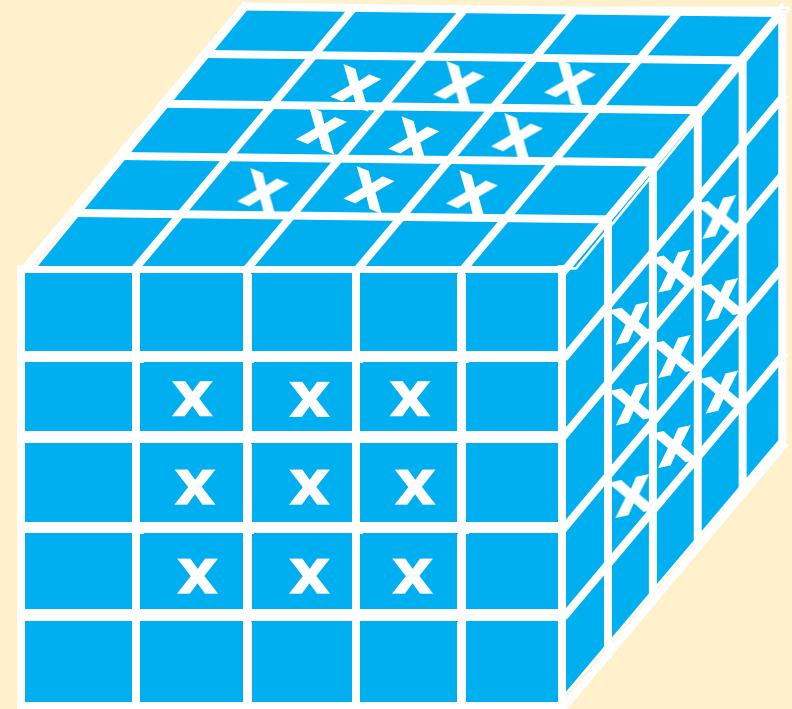
Q.(3): All the faces of a cube are painted with blue colour. Then it is cut into 125 small equal cubes. How many small cubes will be formed having only one face coloured ?

A. 54

B. 8

C. 16

D. 24



EXPLANATION

Sol.(A)

$$n = 5/1 = 5$$

$$\text{No. of small cubes} = n^3 = 125$$

$$n = 5$$

$$\begin{aligned}\text{One face painted cube} &= 6(n-2)^2 = 6(5-2)^2 \\ &= 54\end{aligned}$$

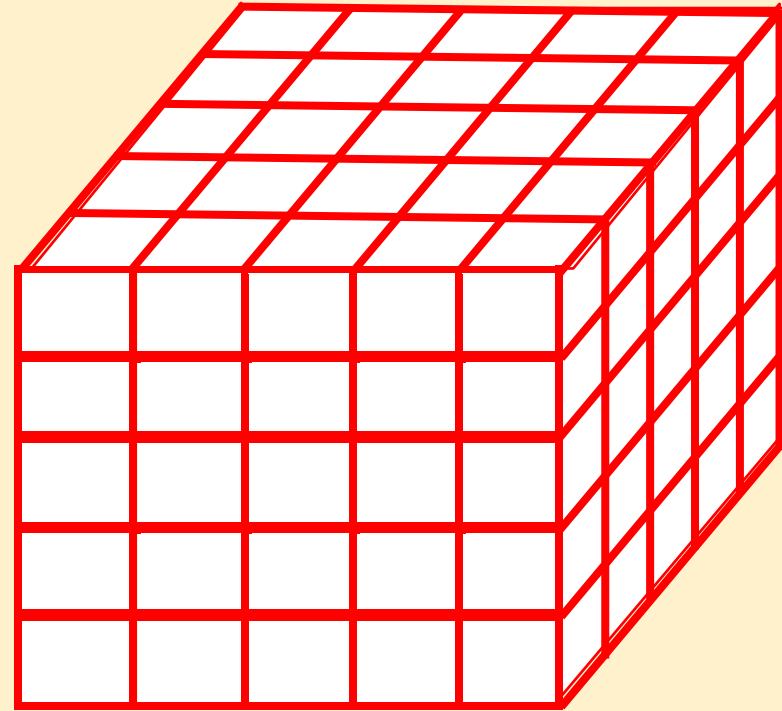
Q.(4) All the faces of a cube are painted with blue colour. Then it is cut into 125 small equal cubes. How many small cubes will be formed having no face coloured?

A. 27

B. 8

C. 16

D. 2



EXPLANATION

Sol.(A)

$$n = 5/1 = 5$$

$$\text{No. of small cubes} = n^3 = 125$$

$$n = 5$$

$$\text{no face painted cube} = (n-2)^3 = (5-2)^3$$

$$= 27$$

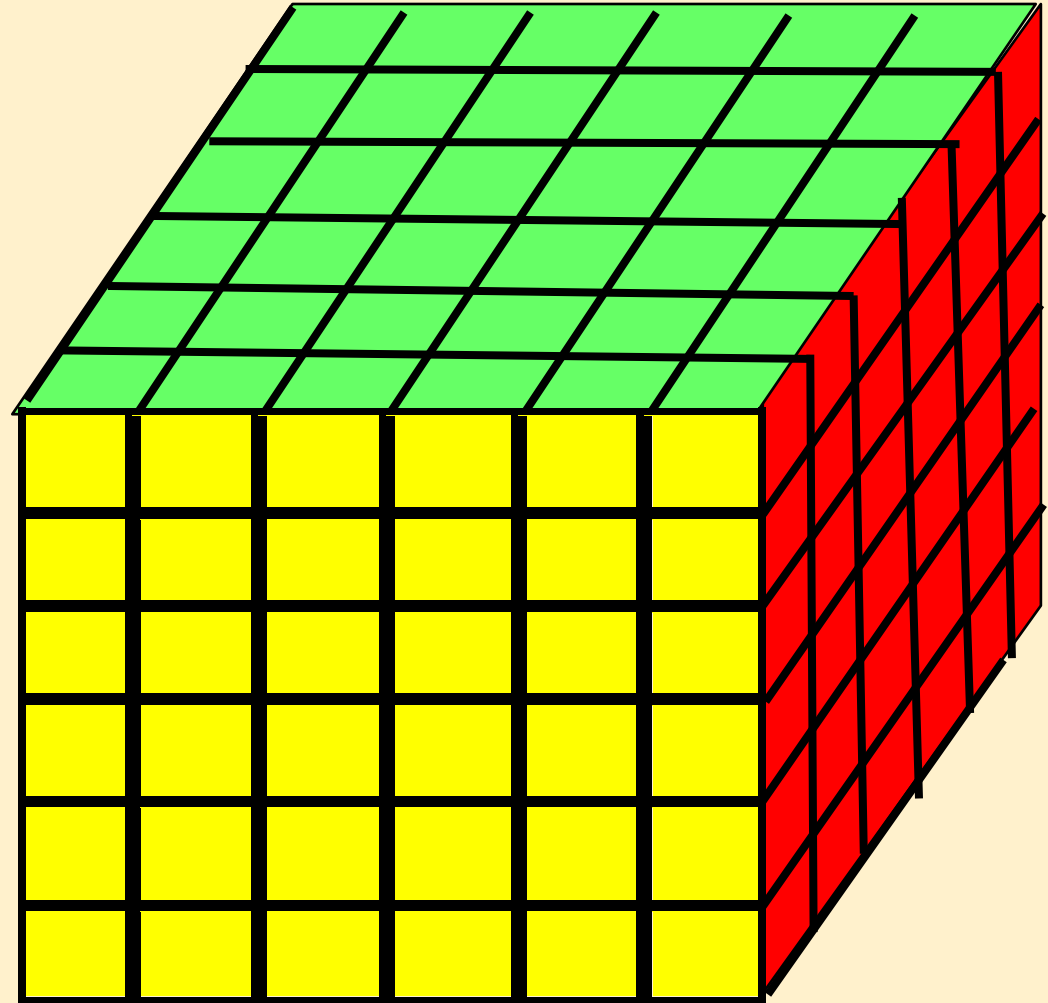
Q.(5): All the opposite faces of a big cube are coloured with yellow, red and green colours. After that is cut into 216 small equal cubes. How many small cubes are there where one face is green and other one is either yellow or red ?

A. 16

B. 48

C. 32

D. 64



EXPLANATION

Sol.(C)

$$n = 6/1 = 6$$

$$\text{No. of small cubes} = n^3 = 216$$

$$n = 6$$

$$\text{two face painted cube} = (n-2)12 = (6-2)12$$

$$= 48$$

face is green and yellow or red

$$= 48 \times 2/3$$

$$= 32$$

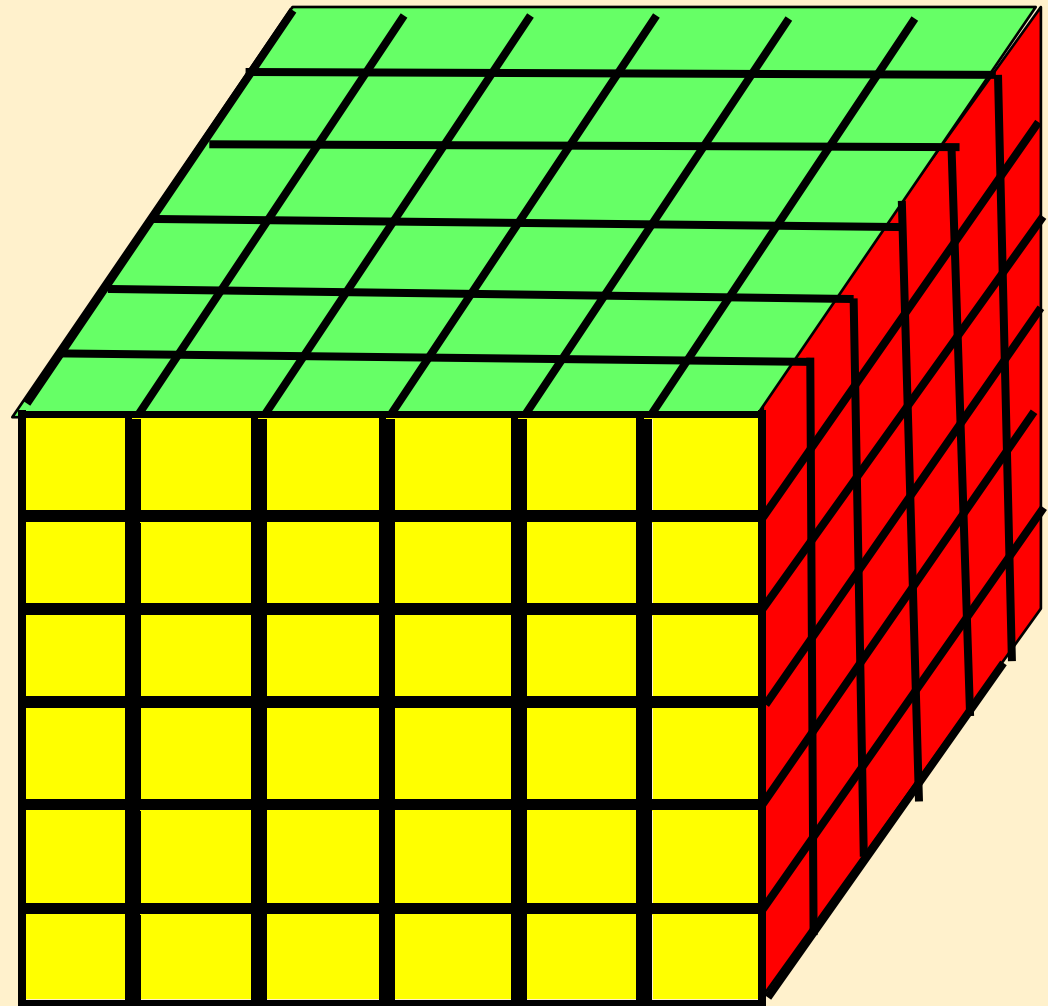
Q.(6): All the opposite faces of a big cube are coloured with yellow, red and green colours. After that is cut into 216 small equal cubes. How many small cubes are there whose no faces are coloured ?

A. 128

B. 32

C. 36

D. 64



EXPLANATION

Sol.(D)

$$n = 6/1 = 6$$

$$\text{No. of small cubes} = n^3 = 216$$

$$n = 6$$

$$\begin{aligned}\text{No face painted cube} &= (n-2)^3 = (6-2)^3 \\ &= 64\end{aligned}$$

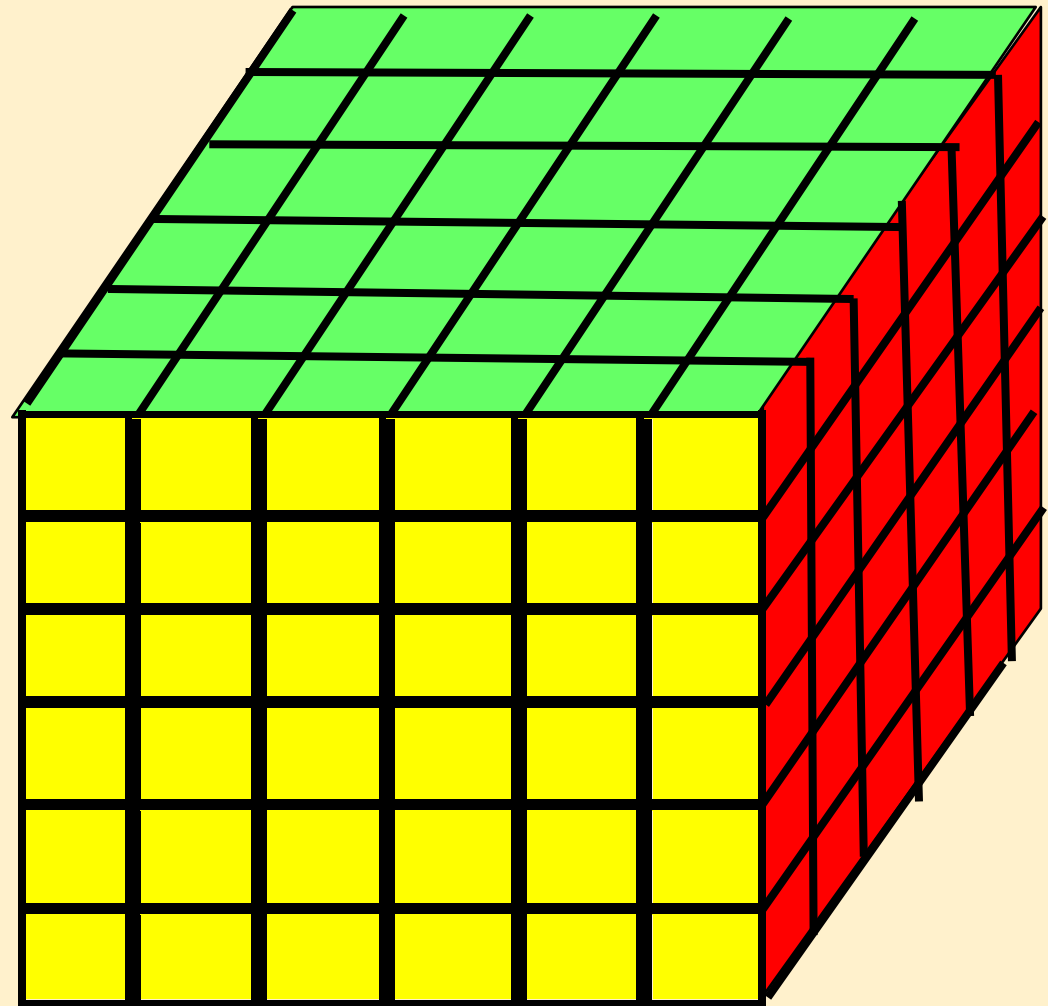
Q.(7): All the opposite faces of a big cube are coloured with yellow, red and green colours. After that is cut into 216 small equal cubes. How many small cubes are there whose 2 faces are coloured ?

A. 128

B. 64

C. 16

D. 48



EXPLANATION

Sol.(D)

$$n = 6/1 = 6$$

$$\text{No. of small cubes} = n^3 = 216$$

$$n = 6$$

$$\begin{aligned} \text{two face painted cube} &= (n-2)12 = (6-2)12 \\ &= 48 \end{aligned}$$

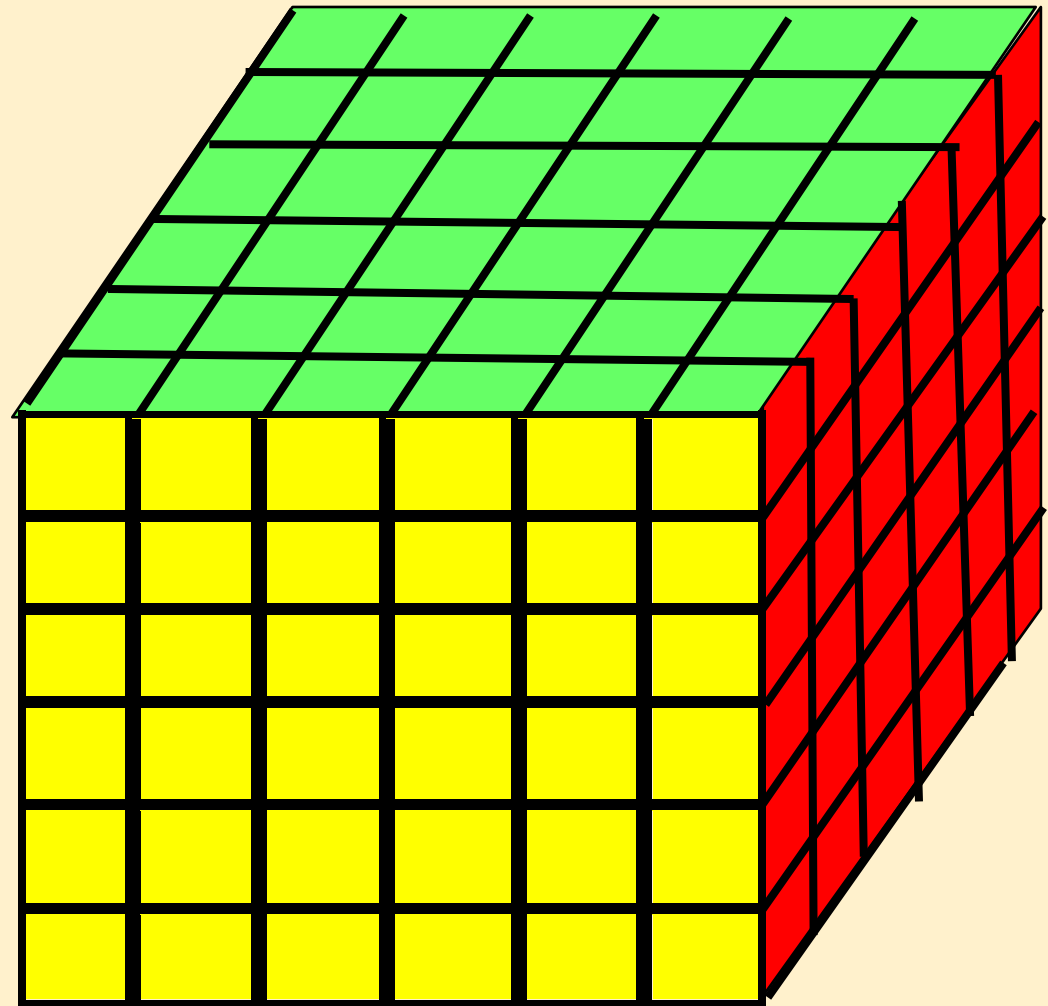
Q.(8): All the opposite faces of a big cube are coloured with yellow, red and green colours. After that is cut into 216 small equal cubes. How many small cubes are there whose only one face is coloured ?

A. 128

B. 64

C. 16

D. 96



EXPLANATION

Sol.(D)

$$n = 6/1 = 6$$

$$\text{No. of small cubes} = n^3 = 216$$

$$n = 6$$

$$\begin{aligned}\text{one face painted cube} &= 6(n-2)^2 = 6(6-2)^2 \\ &= 96\end{aligned}$$

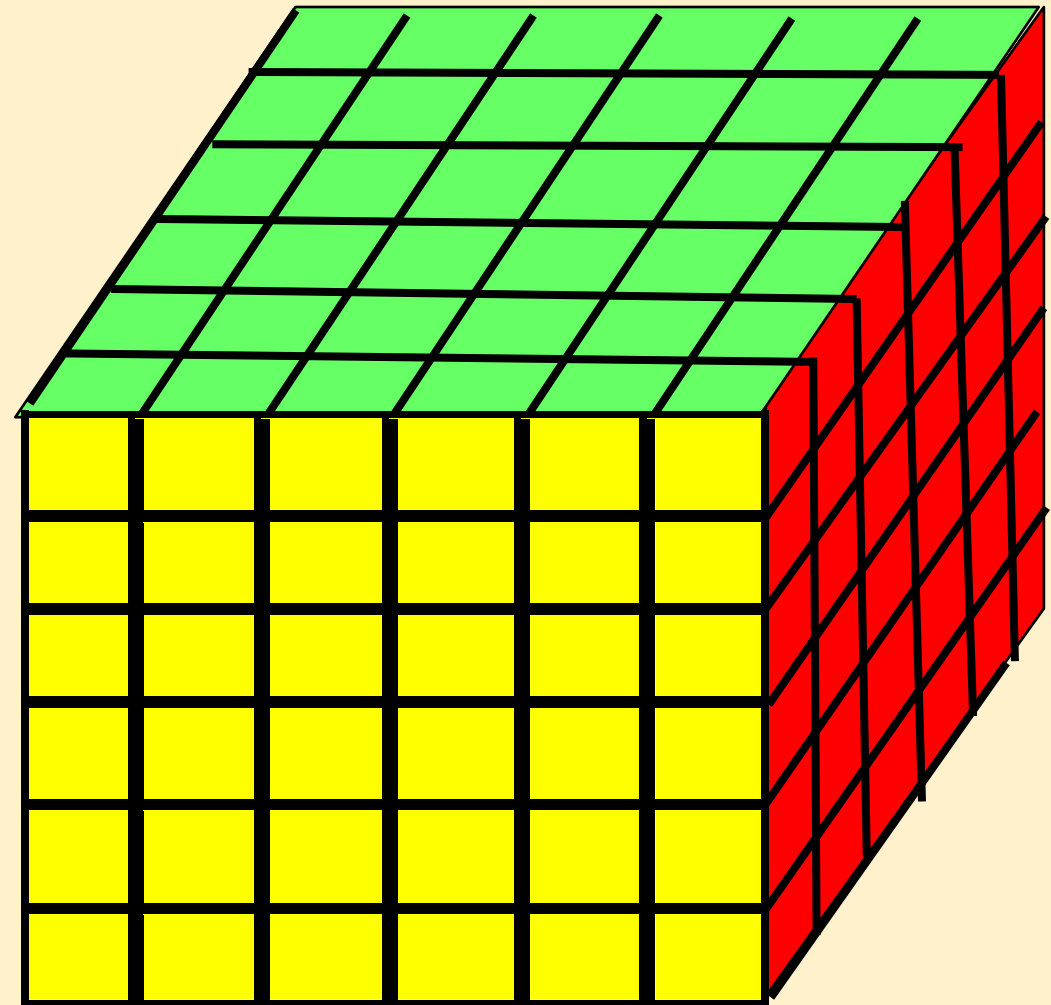
Q.(9): All the opposite faces of a big cube are coloured with yellow, red and green colours. After that is cut into 216 small equal cubes. How many small cubes are there only green colour painted?

A. 96

B. 32

C. 28

D. 48



EXPLANATION

Sol.(B)

$$n = 6/1 = 6$$

$$\text{No. of small cubes} = n^3 = 216$$

$$n = 6$$

$$\text{one face painted cube} = 6(n-2)^2 = 6(6-2)^2$$

$$= 96$$

$$\text{Only green painted cube} = 96/3$$

$$= 32$$