Cubes

Practice Exercise

1) What is the maximum number of identical pieces that can be obtained, when a cube is cut by 21 cuts?

1) 502 2) 512 3) 343 4) 522

2) If 15 cuts are to be made on a cube, then what is the maximum possible number of identical pieces that can be formed?

1) 125 2) 216 3) 212 4) None of these

3) What is the minimum possible number of cuts required to form exactly 1331 identical pieces from cube?

1) 100 2) 30 3) 35 4) None of these

4) What is the minimum possible number of cuts required to cut a cube into 420 identical pieces?

1) 20 2) 22 3) 24 4) None of these

5) What is the least number of cuts required to form exactly 100 identical pieces from a cube?

1) 13 2) 14 3) 11 4) 17

6) A cube is decorated in such a way that a diamond is placed at each corner, 8 diamonds are placed at each edge. How many diamonds are used to decorate the cube?

1) 90 2) 80 3) 70 4) None of these

7) There is a circular pizza with thickness that is cut into 'x' pieces by 4 straight line cuts. What is the maximum and minimum value of 'x' respectively? [TCS]

1) 12, 6 2) 11, 6 3) 12, 5 4) 11, 5

Directions [8-11]: These questions are based on the following information

A Cube is painted on all of its 6 faces. The cube is cut into 512 smaller and identical cubes

8) How many of the smaller cubes have exactly two painted faces?

1) 52 2) 62 3) 72 4) 82

9) How many of the smaller cubes have exactly one painted face?

1) 64 2) 216 3) 206 4) 68

10) How many of smaller cubes have exactly three painted faces?

1) 6 2) 8 3) 4 4) 12

11) How many of smaller cubes have no painted faces?

1) 216 2) 64 3) 68 4) 222

<u>Directions</u> [12-20]: These questions are based on the following information

One pair of adjacent faces is painted in White. One pair of opposite faces of a cube is painted in Blue and out of the two remaining faces, one is painted in Yellow and the other in blue. Now the cube is cut into 125 smaller and identical cubes

12) How many smaller cubes have all the three colours on them?

1) 2 2) 4 3) 6 4) 18

13) How many smaller cubes have only one colour on them?

1) 63 2) 54 3) 64 4) 74

14) How many smaller cubes have exactly one painted face?

1) 63 2) 54 3) 64 4) 74

15) How many smaller cubes have exactly two painted faces?

1) 24 2) 36 3) 48 4) 46

16) How many smaller cubes have exactly two colours on them?

1) 23 2) 33 3) 43 4) 53

17) How many smaller cubes have exactly two painted faces with exactly two colours?

1) 17 2) 27 3) 33 4) 43

18) How many smaller cubes have only white and blue on them?

1) 19 2) 29 3) 24 4) 33

19) How many smaller cubes have no blue color on them?

1) 42 2) 60 3) 52 4) 70

20) How many smaller cubes have yellow or white but not blue colour on them?

1) 33 2) 23 3) 27 4) None of these

Directions [21-26] A large cube is painted with Green color on two of the adjacent faces, one pair of opposite faces is painted with Blue and the remaining two faces are painted with Orange color. The cube is dissected into 64 identical pieces.

21) How many identical pieces have only Blue color?

1) 10 2) 4 3) 8 4) None of these

22) How many identical pieces have all the three colors?

1) 2 2) 4 3) 8 4) 0

23) How many identical pieces have only Green color?

1) 9 2) 12 3) 16 4) 10

24) How many identical pieces are unpainted?

1) 8 2) 27 3) 45 4) None of these

25) How many identical pieces have only Blue & Green?

1) 6 2) 8 3) 9 4) 10

Directions [26-30] A large cube is painted with Voilet color on two of the adjacent faces, one pair of opposite faces is painted with Yellow and Indigo and in the remaining two faces one is painted with Blue and the other is unpainted. The cube is dissected into 125 identical pieces.

26) How many identical pieces have only voilet color?

1)18 2) 24 3) 27 4) 21

27) How many identical pieces have all the three colors?

1) 2 2) 4 3) 8 4) 0

28) How many identical pieces have only Yellow color?

1) 9 2) 12 3) 16 4) None of these

29) How many identical pieces have either yellow or Indigo on one face, violet on the other face and the remaining 4 faces unpainted?

1) 12 2) 14 3) 10 4) None of these

30) How many identical pieces are unpainted?

1) 11 2) 27 3) 9 4) 36

Direction [31- 35]: A cube has six different colours on its faces, namely Red, Blue, Green, Violet, Yellow and White. Each face of the cube is painted with exactly one of the above colours. The cube is dissected into 120 identical pieces by making least number of cuts, such that the minimum number of cuts is made parallel to Red coloured side and Blue coloured side, and the maximum number of cuts is made parallel to the Green coloured side and the Yellow coloured side. ***[Get Video Solution on www.gobrianwiz.in]***

31) How many cuts are made parallel to the sides which are coloured Violet and White?

1) 5 2) 4 3) 3 4) none of these

32) How many identical pieces will have only Blue and Violet or only White and Green on them?

1) 8 2) 6 3) 4 4) none of these

33) What is the total number of identical pieces having only a single side coloured?

1) 26 2) 57 3) 72 4) 52

34) How many identical number of pieces have Red, Green and Violet or Blue, Yellow and Violet color on them?

1) 1 2) 0 3) 2 4) 3

35) How many identical number of pieces have Red and Green only or Blue and violet only?

1) 7 2) 8 3)6 4) None of these

Check The Answers

1	**2**	11	**1**	21	**3**	31	**2**
2	**2**	12	**1**	22	**2**	32	**2**
3	**2**	13	**1**	23	**4**	33	**4**
4	**1**	14	**2**	24	**1**	34	**3**
5	**3**	15	**2**	25	**4**	35	**1**
6	**2**	16	**2**	26	**2**		
7	**3**	17	**2**	27	**1**		
8	**3**	18	**1**	28	**2**		
9	**2**	19	**2**	29	**2**		
10	**2**	20	**1**	30	**4**		