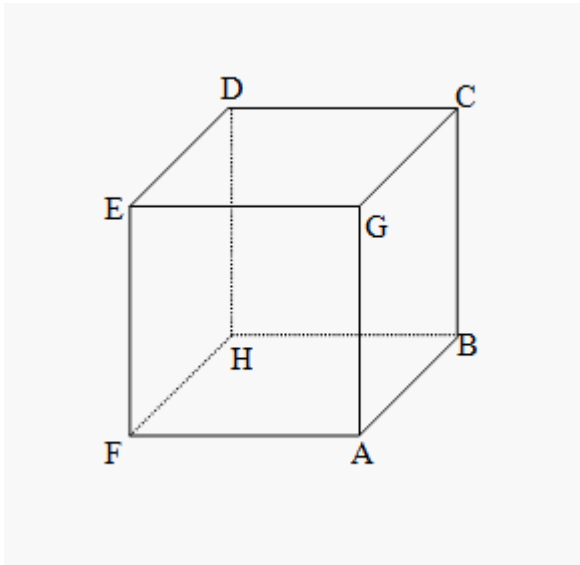


Dices problems

Introduction to Dices problems

A Dice is a cube. In a cube, there are six faces. The six faces in the cube are– ABCG, GCDE, DEFH, BCDH, AGEF, and ABHF.



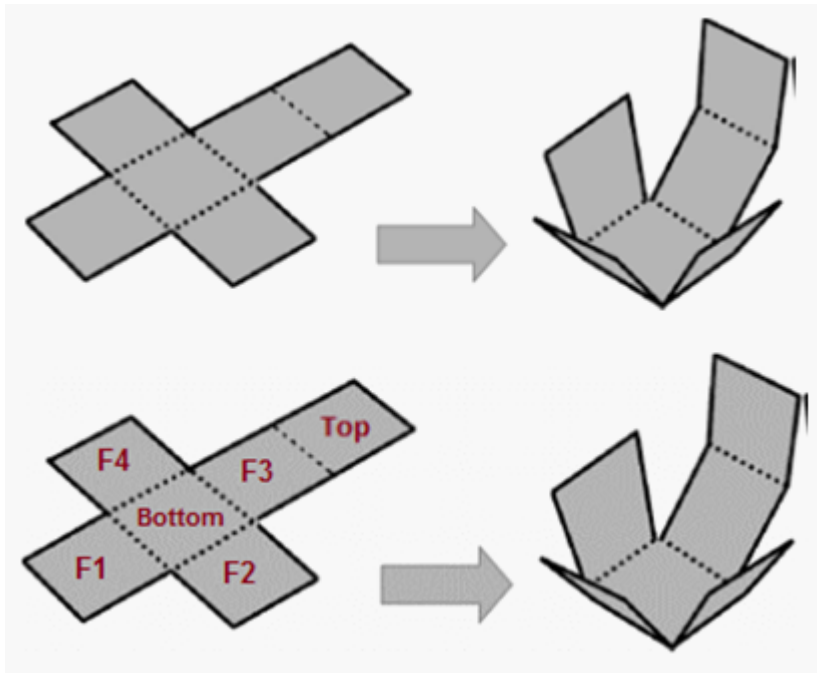
1. Four faces are adjacent to one face
2. There are pairs of opposing faces e.g. Opposite of DEFH is ABCG and so on.
3. CDEG is the upper face of the cube
4. ABHF is the bottom face of the cube.

Important facts

1. A cube has 6 square faces or sides
 2. A cube has 8 points(vertices)
 3. A cube has 12 edges
 4. Only 3 sides of a cube are visible at a time and these sides can never be on the opposite side of each other
 5. Things that are shaped like a cube are often referred to as cubic
 6. Most dice are cube-shaped, with the numbers 1 to 6 on the different faces.
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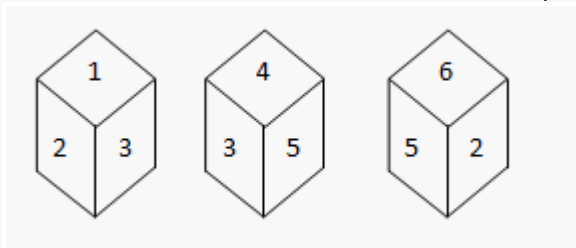
Deconstruction of a cube(flat view)

When we are given a dice it is somewhat difficult to visualize it in 3-D so what we do is that flatten the cube. We can form a cube that has been flattened where we can visualize, the square at the farthest end will give the top of the cube and the square that is the middle will form the base of the given dice. The given figures below can help you understand the theory stated above.



The rest of the square will give the adjacent sides of the dice. Note that we have to clearly visualize the adjacent sides and we have to figure out what exactly the question is asking. The flattening of dice is the easiest way that we can use to solve the dice problems.

Example: 1. Six faces of dice are marked with six numbers 1, 2, 3, 4, 5, and 6. This die is rolled three times and it shows three places:



a) 2

- b) 6
- c) 5
- d) 4

Answer: c) 5

Solution: 2 and 3 are adjacent to 1. So for the number opposite to 1, it should be the same. We observe from the second and third figures that 2 and 3 are adjacent to 5. therefore the answer is 5.

Example: When the given figure is folded to form a cube then which face is opposite to the face with 2?



- a) 2
- b) 4
- c) 1
- d) 6

Answer: c) 1

Solution: Now, this is a peculiar type of flattened cube. However, the rules to solve the questions remain the same. Now, if you want to find the face that is opposite to the face with 2, you should consider it as the base. So, the top face (opposite face) will be the 1.