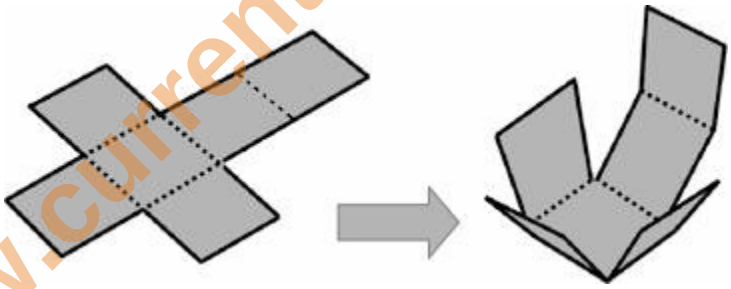
How to Solve Cubes and Dice Problems

While these questions can bewilder some, they are very easy for those with a visual bent of mind, and the ability to visualize figures clearly. Here's how you can make the most of **these seemingly tough questions.**

Let us go through all the types of Dice and Cube questions one by one. This article will be in two parts, the first dealing with 'Deconstructed Cubes' and 'What is on the other side'. The next part will deal with 'Painted **Faces of a C**ube', 'General Arrangement of a Dice' and 'Cubes and Numbers'.

Deconstructed Cube

Dice and cube questions come in many types, the easiest being 'Deconstructed **C**ube'. **Here you are given the flattened-out version of a cube, and are asked to visualize what the constructed cube will look like.**

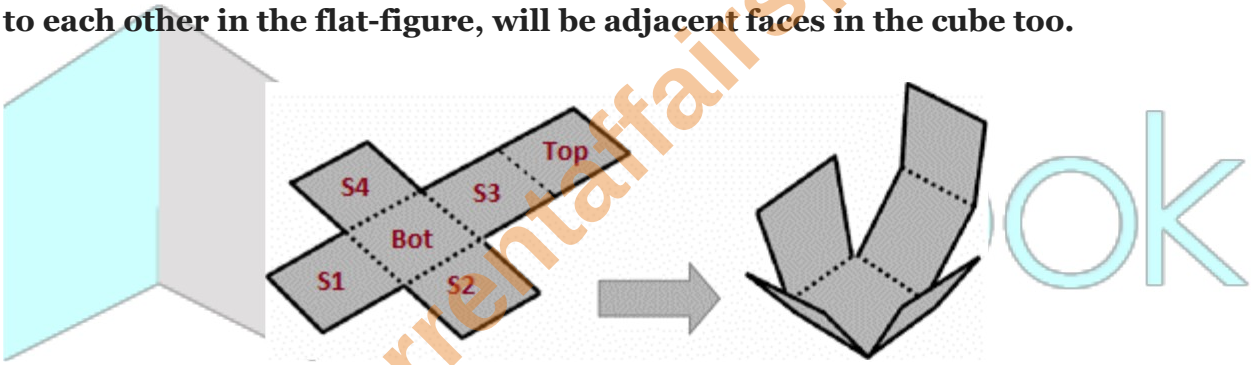


In these questions, the flat cube figure will look something like a cross, with one end of the cross slightly longer than the other three. An important thing to remember here is

that the square at the longer end always forms the top of the cube. The middle square will be the base of the cube, with the other four squares being lateral sides respectively. Once you know this, you can imagine a rudimentary version of the final cube.

> *"The square* ***at the longer end always forms the top of the cube. The middle square will be the base of the cube, with the other four squares being lateral sides respectively.****"*

Moving on, the three ends of the cross, and the middle square on the longest side, will be adjacent lateral faces of the square. The squares that are adjacent to each other in the flat-figure, will be adjacent faces in the cube too.



At this point, you should be able to clearly visualize the six faces of a cube. All that needs to be done now, is to gauge what the question is asking, and give the adjacent or opposite of the mentioned face, as asked.

The example below will make it much easier to understand.

Example of Deconstructed Cube in Cubes and Dice

E.g. 1. Find the correct option figure, when the given unfolded hollow cube is folded.

1. 2. 3. 4.

Ans: 3

Solution:

In option 1, two of the lateral sides (the two blank sides) are placed in such a way that they form a strip over the top. This means that the side facing the right (S2) must be either the top or the base (which is not the case here – here it is showing another lateral side i.e. the dotted side). So option 1 is incorrect. Similarly, two of the adjacent sides (the two blank sides) are placed in such a way in option 2 that they form a strip over the top. Thus the side facing the left (S1) must be either the top or the base (which is not the case here – here it is showing another lateral side i.e. the diagonally half-filled side). Thus option 2 is also eliminated.

When the laterally half-filled side is on the top, and the diagonally half-filled side is one of the lateral sides (S1), the lateral side to its right (S2) must be the dotted side, not a blank side. So option 4 is also incorrect. Clearly, option 3 is the correct answer. When the adjacent lateral sides are placed so that the diagonally half-filled side is on top and the dotted side is on S2, then clearly the base (completely filled side) must be in place of S1.

What is on the other side?

Most questions and riddles are in the realm of what can be seen and felt. But with these kind of questions, are a little tricky as they deal with what cannot be seen. You may be

given a few sides of a cube, and be asked what is on the other sides, or you may be asked to find what is on the opposite side of a particular face of the cube. For these kind of questions, imagine that you are slowly rotating the cube, one side at a time. For instance, refer to the question shown below.

E.g. 2. In the given figure what will be on the surface opposite of Δ?

1.× **2.+** **3.O** **4.÷**

Ans: 3

Solution:

In this problem, you are shown the same cube from multiple sides, thus forming multiple cube figures.

You can see that from the first two pictures that O and × are adjacent to each other. If we take these to be two lateral sides, let us assume that ÷ forms the top side with O on S1 and × on S2. If we invert the box with the same two lateral sides facing us then × goes on to S1 and O on to S2. Then the bottom side goes on top. So we can then safely say that – forms the bottom side.

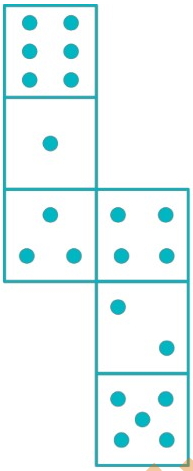
Now in the third figure, we place the top side upright again, so that ÷ goes back on top. But we can see that both the sides facing us (S1 & S2) have changed. Now we have on **S1 and + on S2. This means that × must have rotated to S4 while O must have rotated to S3. Thus if** we are asked what symbol is opposite which is on S1, the answer must be **whatever is on S3, which in this case is O.**

Hence you can see how the first 3 figures were sufficient to answer the question.

Dice and cube questions come in many types, and Part-2 will deal with some of those other types. Keep practicing and solve as many questions as possible, for maximum benefits.

Now Try It Yourself

Q1. How many dots lie opposite to the face having three dots, when the given figure is folded to form a cube?



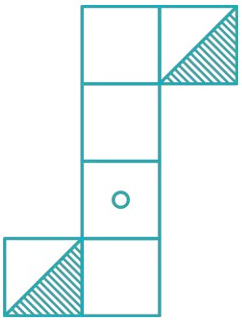
1. **2**
2. **4**
3. **5**
4. **6**

Ans: Option 4) 6

Solution:

This is a different sort of flattened cube. But the fundamentals remain the same. If we want to find the side opposite the one with three dots, we consider it the base. The top side (opposite side) will then clearly be the one that has six dots.

Q2. Choose the box that is similar to the box formed from the given sheet of paper (X).



(X)

A. 

B. 

C. 

D. 

1. **A & C only**
2. **A & D only**
3. **B & D only**
4. **C & D only**

Ans: option 1) A & C only

<u>Solution:</u>

Figure A → This box can only be folded in this way if we use the following configuration.

But A is possible.

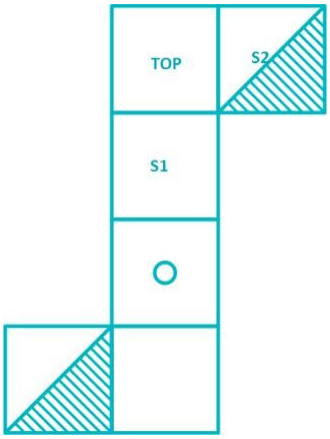


Figure B → If you consider the dotted side to be top, then the non-adjacent blank side will be on the bottom. And the two adjacent blank sides will form sides adjacent to the dotted side, but opposite to each other. As there are no other blank sides left, figure B is not possible.

Figure C → Possible with the following configuration.

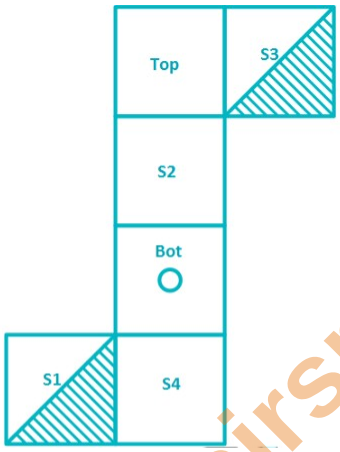
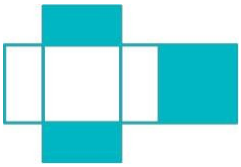


Figure D → From the figure above, we can clearly see that the two shaded sides can never be adjacent. This figure is thus not possible.

Q3. Choose the box that is similar to the box formed from the given sheet of paper (X).



(X)

A. **B.** **C.** **D.**

1. **A & C only**
2. **B & D only**
3. **C & D only**
4. **A & D only**

Ans: option 1) A & C only

Solution:

Clearly, the two square sides will form the top and bottom. And the two rectangular blank strips will be opposite each other, and the two filled rectangular strips will be opposite each other. Since in figures B and D, the two filled rectangular sides have been shown adjacent to each other, we can say that these figures are incorrect. Options A & C on the other hand are possible.

Since the dotted side and the side with triangles must be opposite to each other, we can eliminate options 1 and 3. If we keep one of the blank square sides on top, we can have one more adjacent blank square either in S1 or S2 position, but no in both positions.

Thus we can eliminate option 2. Option 4 is the only correct answer.