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# CUBES

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# Intended Learning Outcomes:

By the end of this session, students will be able to:

1. Identify the properties of cubes and cuboids.
2. Understand the methods to solve questions based on cubes and cuboids.

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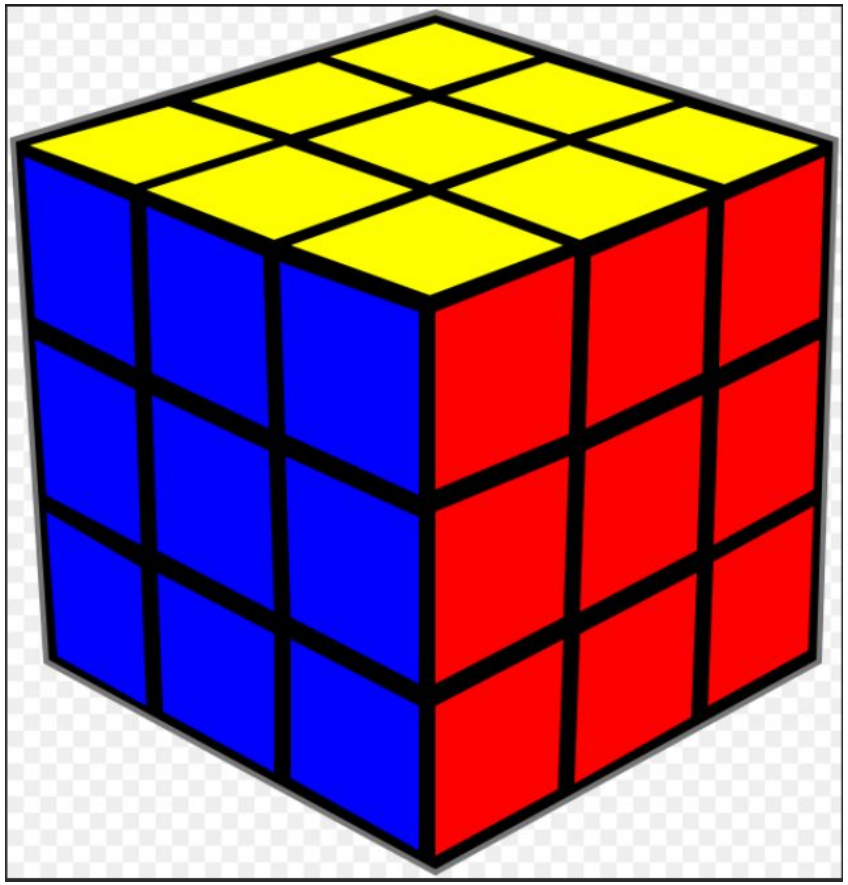
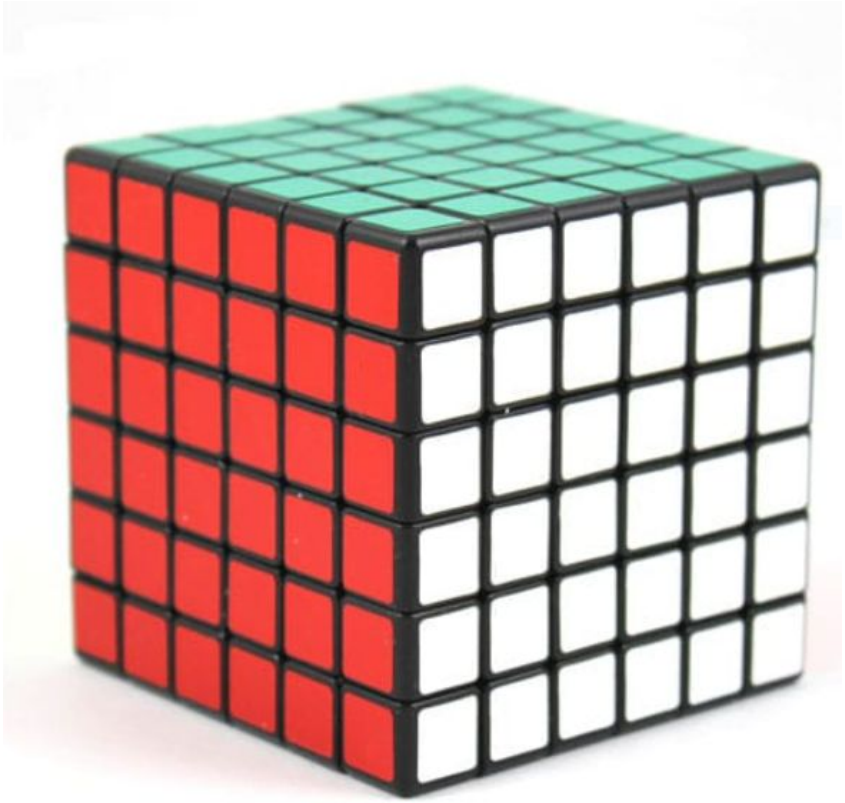
# INTRODUCTION:





How many maximum number of pieces will be obtained when 8 cuts are made on a cube?

How many maximum number of pieces will be obtained when 27 cuts are made on a cube?

How many maximum number of pieces will be obtained when 17 cuts are made on a cube?

How many maximum number of pieces will be obtained when 16 cuts are made on a cube?

How many minimum number of cuts on a cube are required to obtain 343 pieces?

How many minimum number of cuts on a cube are required to obtain 576 pieces?

How many minimum number of cuts on a cube are required to obtain 448 pieces?

A cube is decorated in such a way that one diamond is placed at each corner, five diamonds on each edge, three diamonds at the center of every face. Find the total number of diamonds on that cube.

A cube is decorated in such a way that one diamond is placed at each corner, three diamonds and two flowers on each edge, three flowers and one diamond at the center of every face. Find the square of the difference between number of flowers and diamonds on that cube.

27 small and identical cubes are put together to form a large cube now this large cube is painted on all the six faces. Find how many small cubes have:

1. No face painted
2. Exactly one face painted
3. Exactly two face painted
4. Three faces painted

125 small and identical cubes are put together to form a large cube now this large cube is painted on all the six faces. Find how many small cubes have:

1. No face painted
2. Exactly one face painted
3. Exactly two face painted
4. Three faces painted

343 small and identical cubes are put together to form a large cube, now this large cube is painted on all the six faces in such a way that two opposite faces are painted in blue, two adjacent faces are painted in blue, and the remaining are painted one in blue and the other in red. Find how many small cubes have:

1. Only one colour on them
2. Exactly two different colours on them
3. Three different colours on them
4. No blue on them

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# THANK YOU