

Puzzle – 12

Q- Weight of Heavy Ball Puzzle

There are 2187 balls, out of them 1 is heavy. Find the minimum number of attempts the balls have to be weighed for finding out the heavy ball.

My Approach and Solution –

I can see that 2187 is a unique very specific number and the solution might have to do something with this number.

2187 is the 3 to the power 7. So, what I guess is that first we divide the 2187 balls into 3 groups of 729 balls, and then weigh the first two groups on the balance, if there is an imbalance on the weighing balance then we know which group has the ball with greater mass. But, if there is a balance on the weighing balance, it means that the third group has the ball with the greater mass.

So, after 1 iteration, we are just left with $2187 / 3 = 729$ balls to figure out with. Repeating this process 'n' number of times will give the result and as I mentioned 2187 is 3 to the 7th power.

Therefore, it should take 7 tries to find the ball with heavy mass.