Puzzle – 30

Q- Burning Rope Puzzle Puzzle

A man has two ropes of varying thickness (Those two ropes are not identical, they aren't the same density nor the same length nor the same width). Each rope burns in 60 minutes. He actually wants to measure 45 mins.

How can he measure 45 mins using only these two ropes. He can't cut the one rope in half because the ropes are non-homogeneous and he can't be sure how long it will burn.

My Approach and Solution –

To measure 45 minutes using only the two ropes, the man can follow the following approach:

1. Label the two ropes as Rope A and Rope B, without knowing their specific properties like density, length, or width.

2. Light both ends of Rope A from one side and one end of Rope B from the other side simultaneously.

3. Rope A will burn completely in 60 minutes (since it burns in 60 minutes entirely).

4. Meanwhile, Rope B will burn partially, but it will not burn for the full 60 minutes.

5. Once Rope A finishes burning (60 minutes have passed), Rope B will have burnt for 30 minutes (since both ends were lit).

6. At this point, one end of Rope B is still burning. To measure the remaining 15 minutes, the man needs to use Rope B again.

7. Light the other end of Rope B from the non-burning end.

8. Now, Rope B will take another 15 minutes to burn completely from this point.

So, by using both ropes simultaneously and partially, the man can measure 45 minutes in total (30 minutes with Rope A and 15 minutes with Rope B).