



Discrete Mathematics

Functions

Matching initials - Solution

Prof S.R.S. Iyengar

Department of Computer Science

IIT Ropar

The slide features a blue background with several mathematical and technical icons: a graph with nodes and edges, a Rubik's cube, a DNA double helix, and a Venn diagram. In the bottom left corner is the IIT Ropar logo, and in the bottom right corner is the NPTEL logo.

# Discrete Mathematics

## Mathematical Induction and pigeonhole principle

### Matching initials - Solution

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Did you find the solution? The question was you have to find the number of people, the  $x$  number of people such that you will it will guarantee you that two people have the same first alphabet in their name that is the first alphabet will be matched. So what is this number  $x$ ?

Don't you think it will be 27 because in a group of 27 people you will definitely find two people with the first alphabet in their name same. Why? Very obvious you would have 26 alphabets in English and in this case even if 26 people have all their names with different alphabets starting with different alphabets the 27 person will definitely match with someone. It mean his name and someone's name the first alphabet will be the same.

26 alphabets in English.

27<sup>th</sup> person will match with someone.

27 people in a group will guarantee  
that there are 2 people with the same first  
alphabet in their name.



So 27 is that number where 27 people in a group it will guarantee you that two people will have the same first alphabet in their names.