

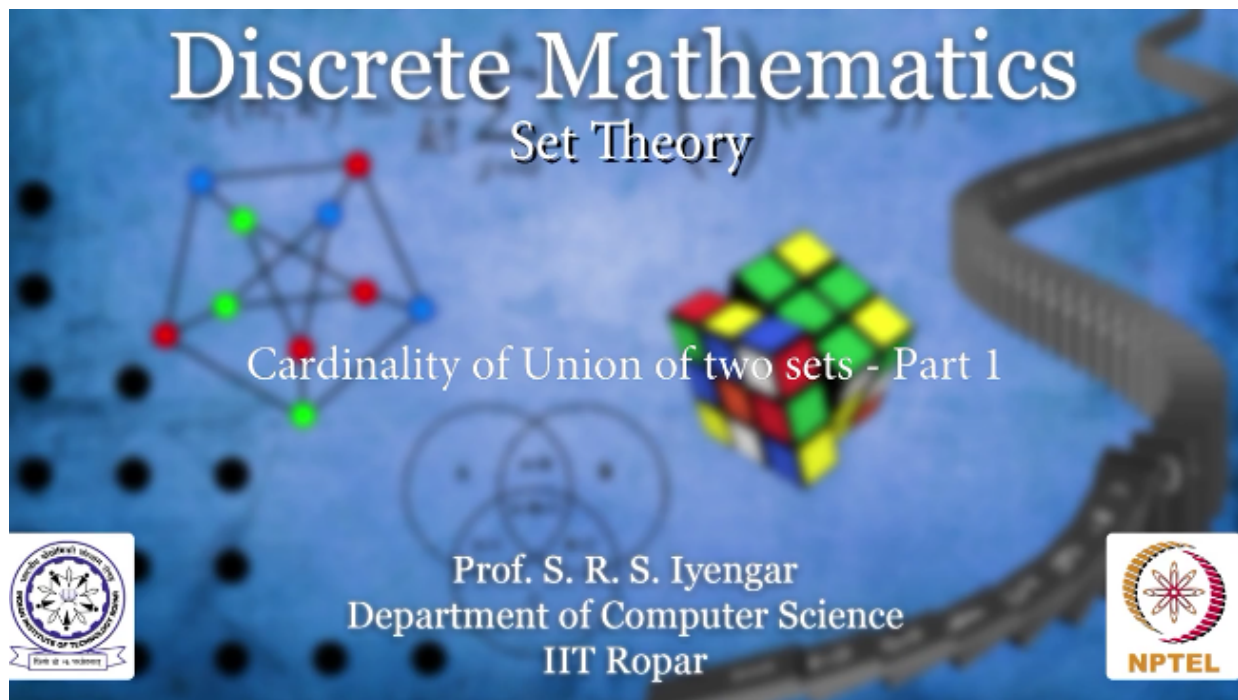
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Discrete Mathematics  
Set Theory

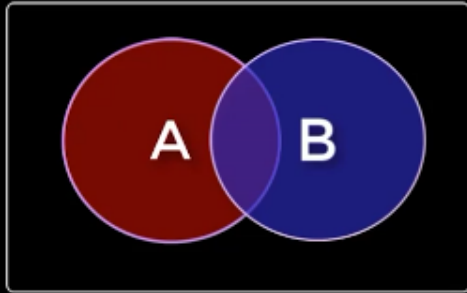
Cardinality of Union of two sets – Part 1

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Given a set A and the set B, there could be some common elements between them, correct, how many elements are there in A? Let's say M number of elements, and let's say there are N number of elements in B, how many elements are there in A union B? That's a pretty simple question with a simple answer, so we use what is called Venn diagrams where we put a rectangle, put the set A, put the set B, also assume that there could be something in common between A and B, and then count the number of elements in B, number of elements in A, and exclude the over counted intersection, so the number of elements in A union B is simply number of elements in A, number of elements in B, Harrod and minus number of elements in A intersection B.

# Venn Diagram



$$|A \cup B| = |A| + |B| - |A \cap B|$$



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