Discrete Mathematics

Functions

Relations vs Functions - Part 2

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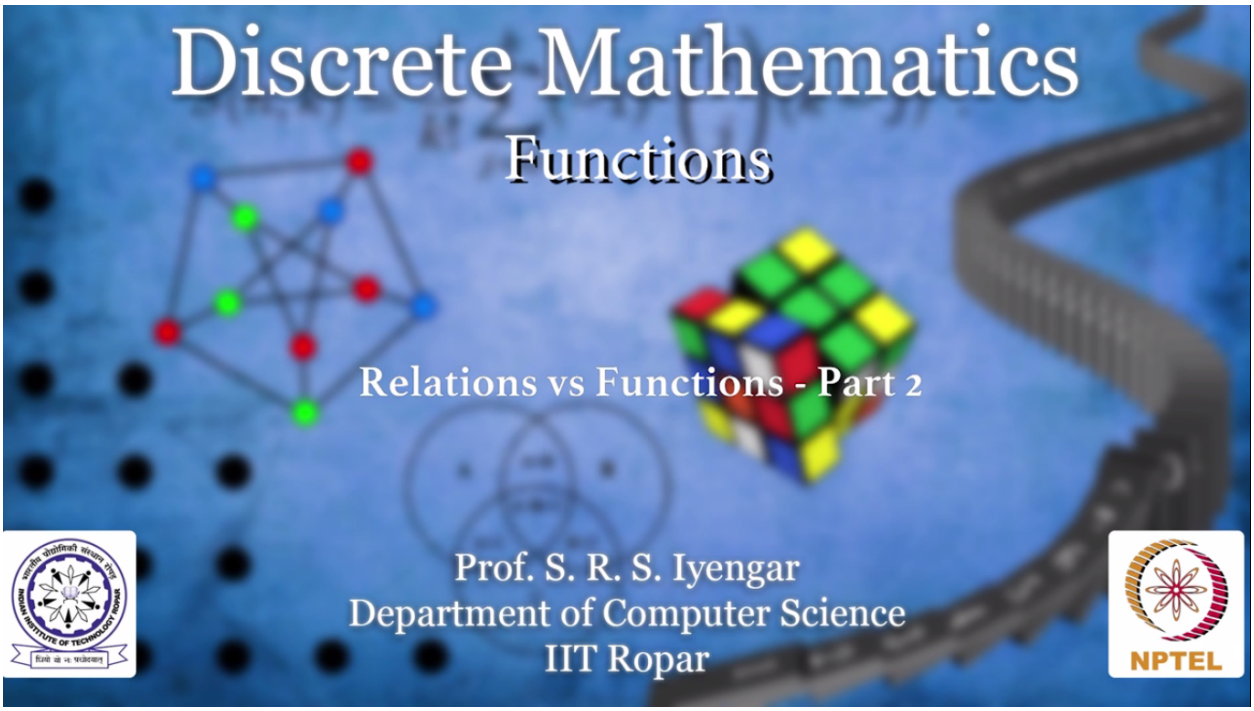
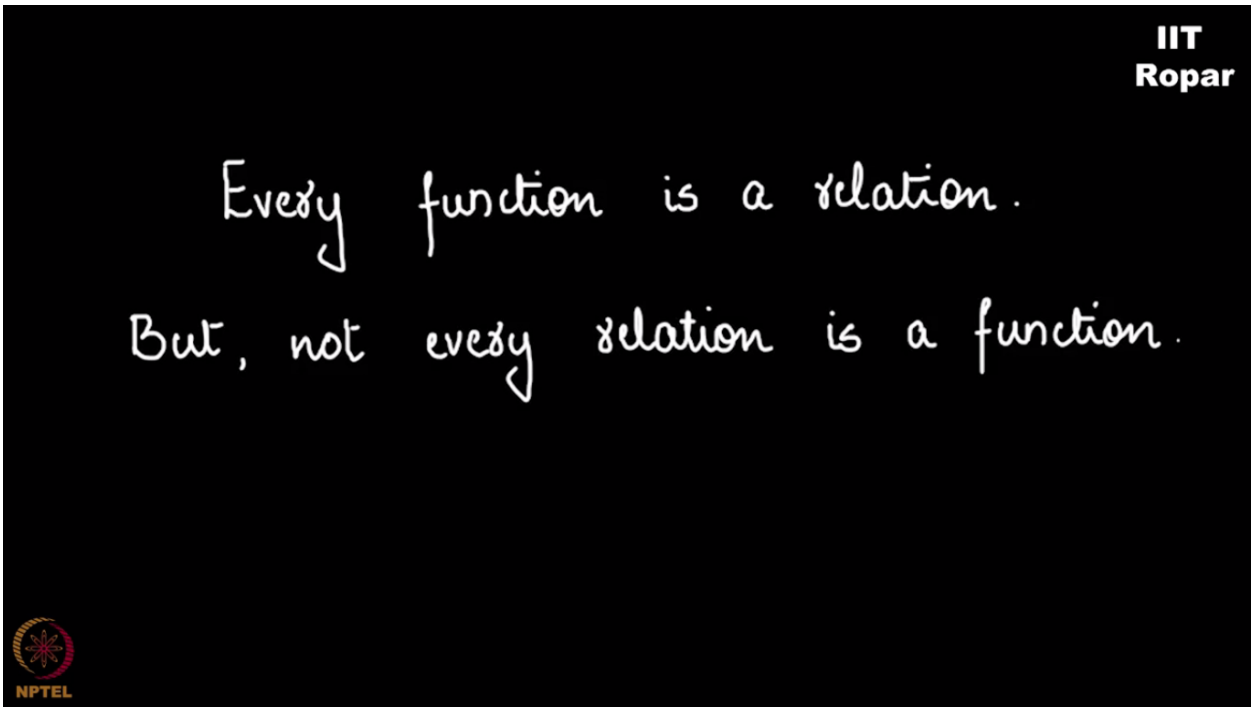


Now that you know what is a function you must be wondering the difference between relations and functions. With this example things will become clear. Consider this mapping from the set of all real numbers to the set of all real numbers defined as f of x is equal to root x. Please wait. Is this even a function? Definitely no because it violates the rule of the function and what is the rule? One element cannot be mapped to two elements. So what is happening here? 4 is mapped to +2 and -2 and hence it is not a function but please note it is certainly a relation. Why? Because a relation is just a subset of R cross R and hence we will be considering the set where a number comma its root is there and hence it is a relation but not a function.



So the most important point is every function is a relation but not every relation is a function.