NPTEL

NPTEL ONLINE CERTIFICATION COURSE

Discrete Mathematics
Principle of Inclusion and Exclusion

Formula for Number of Onto Functions

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In general the number of onto functions from a set of an elements to a set of N elements is given by, let us see the formula now,
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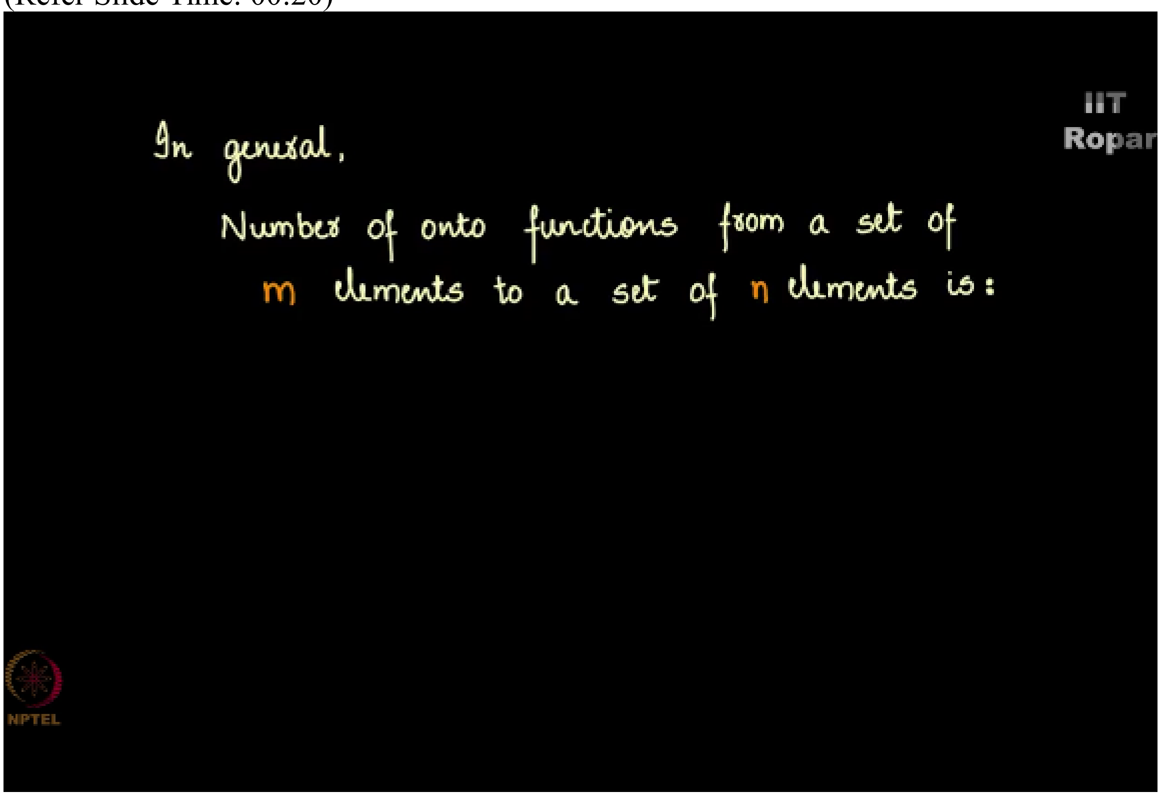

N choose 0 into N to the M – N choose 1 into N-1 to the M + N choose 2 into N-2 to the M – N choose 3 into N-3 to the M + N choose 4 into N-4 to the M so on + -1 to the N into N choose N into N-N to the M, do you see N-N would become 0.
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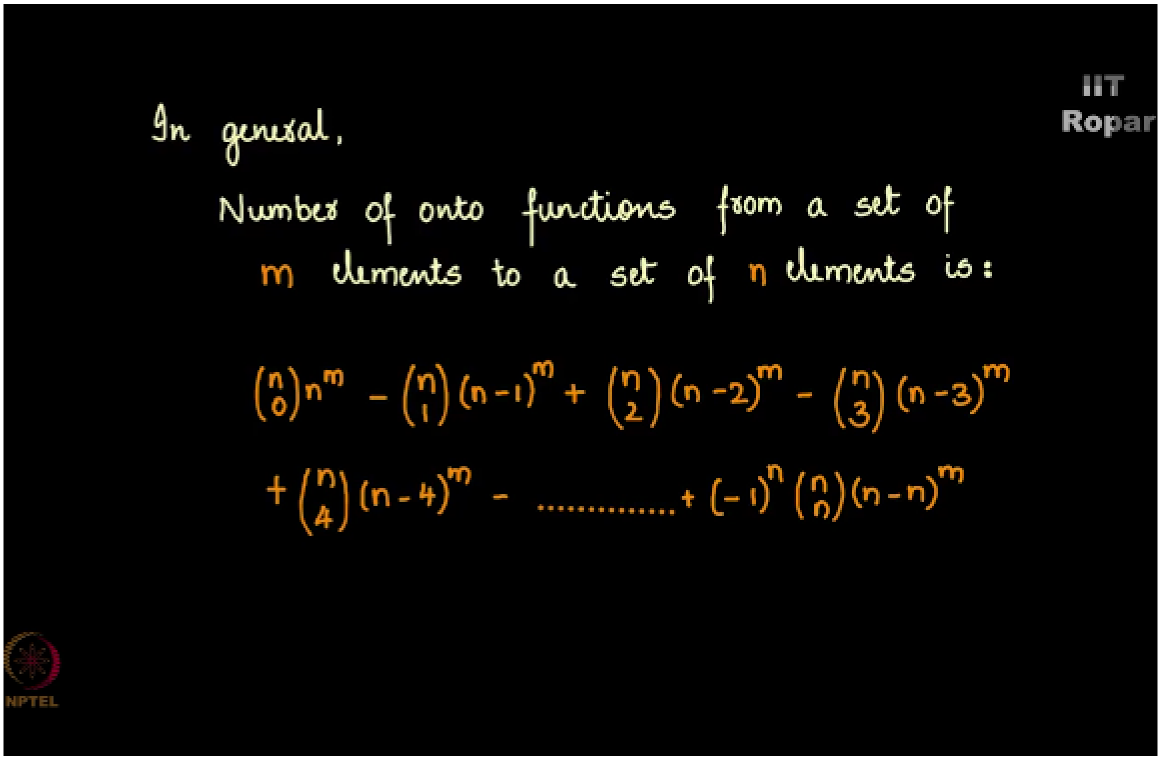

Now how can I write it this formula as? I can write it as summation I from 0 to N, -1 to the I N choose I into N-I whole to the M,
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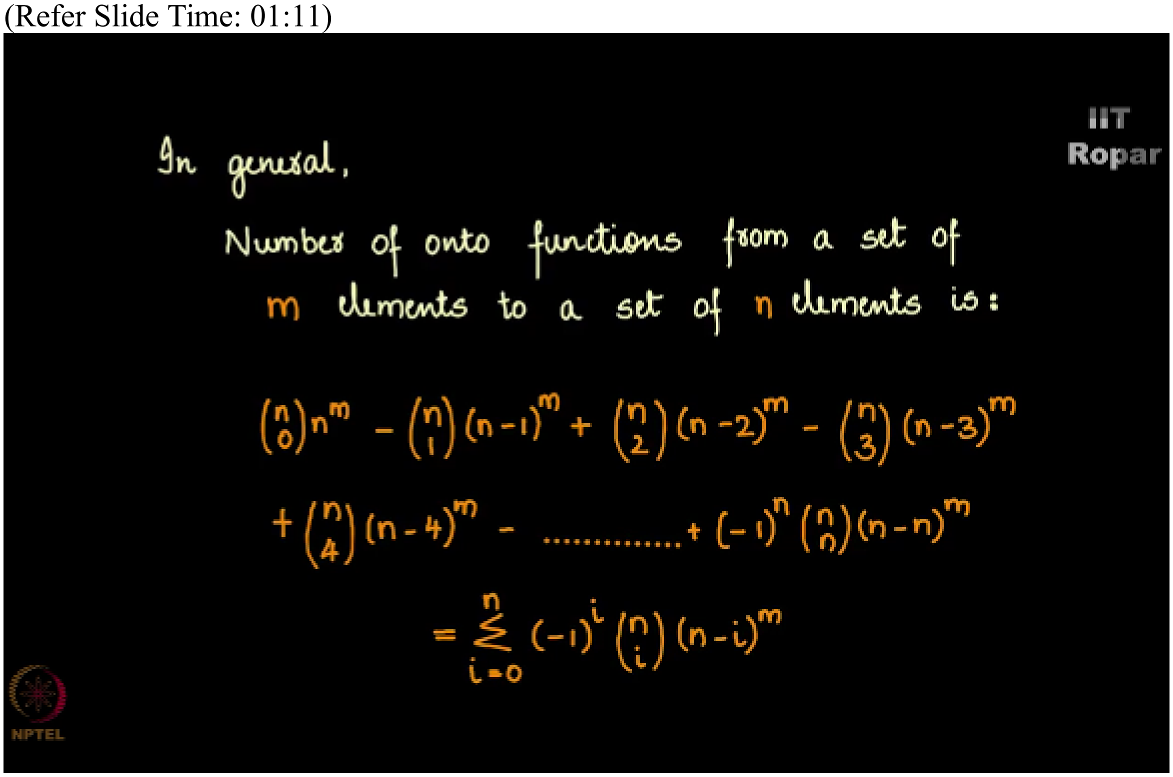

so this is the formula for the number of onto functions from a set of M elements to a set of N elements, the professor in the previous video had taken a particular case and had solved the problem, now this is the general formula, we'll be seeing a couple of problems in the next video.

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