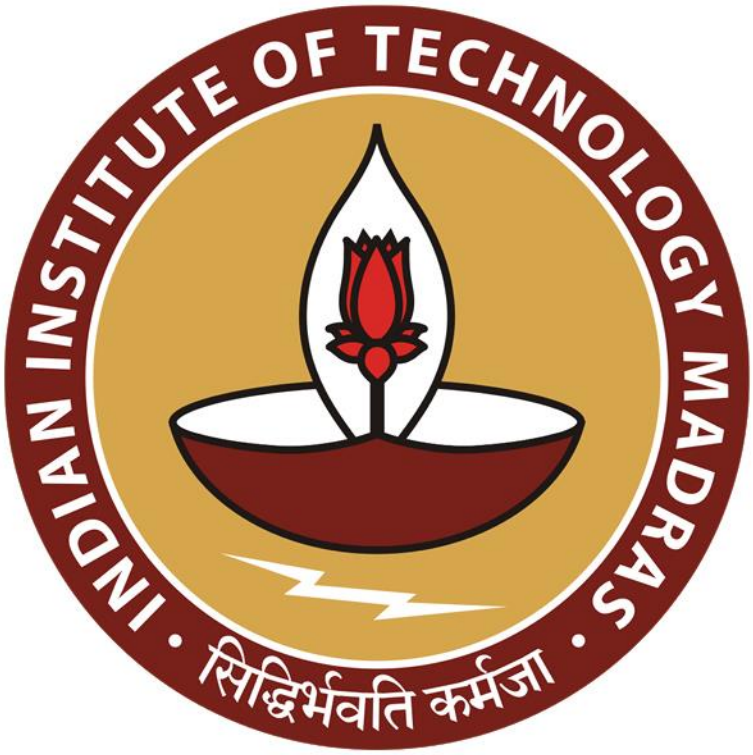
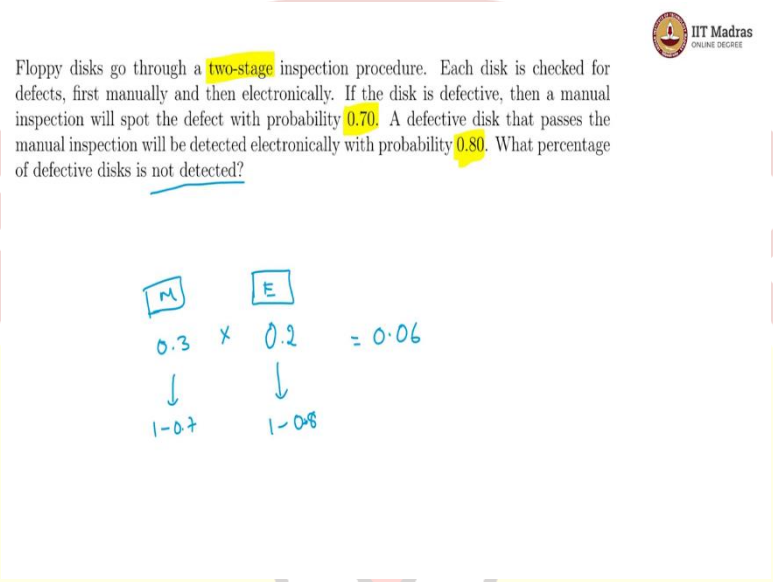


IIT Madras

ONLINE DEGREE

Statistics for Data Science-1
Professor. Usha Mohan
Prathyush P (Support Team)
Department of Management Studies
Indian Institute of Technology, Madras
Week 7 Tutorial 1

(Refer Slide Time: 0:14)



Hello statistics students. In this week's tutorial we will do problems related to conditional probability. In this problem, we have floppy disks which go through a two-stage inspection procedure, each disk is checked for defects first manually then electronically. If the disk is defective, then a manual inspection will spot the defect with probability 0.7. a defective disk that passes through the manual inspection will be detected electronically with a probability of 0.8. What percentage of defective disks is not detected?

So, there there is a two-stage process, one is manual and the other is electronic and in the first case so we are saying that the disk is not detected by these two stages, so the probability for that in the manual is 0.3 and the probability for that in the electronic stage is 0.2. So, now when we look at the combined probability we have 0.2×0.3 which is 0.06. So, this 0.3 is 1-0.7 because 0.7 is the probability of detection and the probability of not being detected is 0.3 likewise this is 1- 0.8.