Assignment 1

AI1110: Probability and Random Variables
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1 10.13.3.40: Question.A lot consists of 48 mobile phones of which 42 are good, 3 have only minor defects and 3 have major defects. Varnika will buy a phone if it is good but the trader will only buy a mobile if it has no major defect. One phone is selected at random from the lot. What is the probability that it is (i) acceptable to Varnika? (ii) acceptable to the trader?

Answer:

$$(i)\frac{7}{8}$$

$$(ii\frac{15}{16}$$

Solution:Given Total Number Of Mobiles n(S)=48
(i)Let E1 = Event that Varnika will buy a mobile phone.

$$n(E1) = 42$$

$$P(E1) = \frac{n(E1)}{n(S)} = \frac{42}{48} = \frac{7}{8}$$

(ii)Let E2 = Event that trader will buy only when it has no major defects.

$$n(E2) = 45$$

$$P(E2) = \frac{n(E2)}{n(S)} = \frac{45}{48} = \frac{15}{16}$$