

Question 10.13.3.40

EE22BTECH11051

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 defects. One phone is selected at random from the lot. What is the probability that it is

- 1) acceptable to Varnika?
- 2) acceptable to the trader?

solution: Then

Random variable	values	Events
X	0	The Mobile is in good condition
	1	The Mobile has major defects
	2	The Mobile has minor defects

TABLE 1: assigning the random variable

- 1) Varnika buys a mobile only when it is in good condition. Hence the probability of Varnika buying the mobile is given as;

$$\Pr(X = 0) = \frac{42}{48} \quad (1)$$

$$= \frac{7}{8} \quad (2)$$

- 2) Trader will buy a mobile only when the mobile doesn't have any major defects. Hence the probability of the trader buying the mobile is given as;

$$1 - \Pr(X = 1) = 1 - \frac{3}{48} \quad (3)$$

$$= \frac{15}{16} \quad (4)$$