Answer on Question #73640 – Math – Statistics and Probability

Suppose you just received a shipment of fourteen televisions. Three of the televisions are defective.

Question

If two televisions are randomly selected, compute the probability that both televisions work.

Solution

Probability that a television works is 11/14. Probability that a television is defective is 3/14.

Probability that the first TV works and the second works is

$$\frac{11}{14} \cdot \frac{10}{13} = 0.60.$$

(If the first selected TV works, total number of televisions left is 13, and the number of working TV is 10).

Answer: 0.60.

Question

What is the probability at least one of the two televisions does not work?

Solution

The event that 'at least one of the two televisions does not work' is the opposite to the event 'both TV work'. So the probability of 'at least one of the two televisions does not work' is

1- Pr (both works)= $1 - 11/14 \cdot 10/13 = 0.40.$

Answer: 0.40.