

Answer on Question #81478 – Math – Statistics and Probability

Question

Seven percent items produced from a certain machine are defective. an inspector checks the item before the shipment. The probability that the inspector correctly classify the item is 0.75 if the item is shipped .what is probability that it is defective.

Solution

The item is defective if it was defective from the very beginning (probability of this event is 0.07) and the inspector was mistaken (the probability of this event is $1 - 0.75 = 0.25$). If the inspector did not make a mistake, he would have found the defective part and rejected it.

So, the probability of a defective item is

$$Pr = 0.07 \cdot 0.25 = 0.0175$$

Answer: 0.0175.