

Answer on Question #59911 – Math – Statistics and Probability

Question

A certain shop repairs both audio and video components. Let A denote the event that the next component brought in for repair is an audio component, and let B be the event that the next component is a compact disc player (so the event B is contained in A). Suppose that $P(A) = 0.6$ and $P(B) = 0.05$. What is $P(B|A)$?

Solution

Since B is contained in A, $A \cap B = B$, then

$$P(B|A) = \frac{P(A \cap B)}{P(A)} = \frac{P(B)}{P(A)} = \frac{0.05}{0.6} = \frac{5}{60} \approx 0.083.$$

Answer: $P(B|A) = \frac{5}{60} \approx 0.083.$