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Conditional Probability

In a group of 100 sports car buyers, 30 bought alarm systems, 20 purchased bucket seats, and 10 purchased an alarm system and bucket seats. If a car buyer chosen at random bought an alarm system, what is the probability they also bought bucket seats?

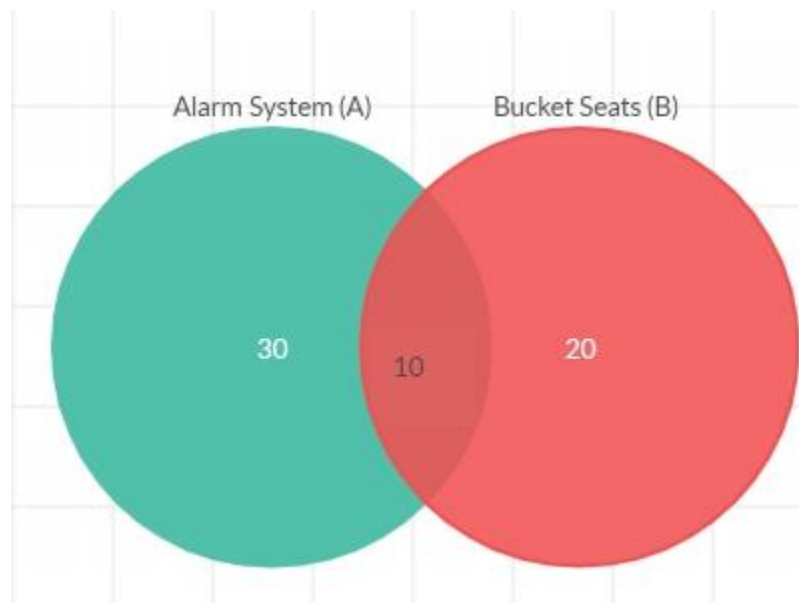
Answer :

Step 1: Figure out $P(A)$. It's given in the question as 30%, or 0.3.

Step 2: Figure out $P(A \cap B)$. This is the intersection of A and B: both happening together. It's given in the question 10 out of 100 buyers, or 0.1.

Step 3: Insert your answers into the formula:

$$P(B|A) = P(A \cap B) / P(A) = 0.1 / 0.3 = 0.33.$$



The probability that a buyer bought bucket seats, given that they purchased an alarm system, is 33,33%.