

A survey was made studying households of a city of 100,000 about their preference drink (coffee or tea)

1. 40,000 like coffee
2. 20,000 like tea
3. 10,000 like both coffee and tea

We are considering those events:

Event A : "drink Coffee" .

Event B : "drink tea."

Calculate:

1. $P(A) = \frac{40,000}{100,000} = 0.4$ (one point)
2. $P(B) = \frac{20,000}{100,000} = 0.2$ (one point)
3. $P(A \cap B) = \frac{10,000}{100,000} = 0.1$ (one point)
4. $P(\bar{A}) = 1 - 0.4 = 0.6$ (one point)
5. $P(\bar{B}) = 1 - 0.2 = 0.8$ (one point)
6. $P(A \cup B) = P(A) + P(B) - P(A \cap B) = 0.4 + 0.2 - 0.1 = 0.5$ (one point)

Fill the following table,

Events	B	\bar{B}	Total
A	0.1	0.3	0.4
\bar{A}	0.1	0.5	0.6
Total	0.2	0.8	1.0

(4 point)

Calculate: (Please discards the question below)

1. The probability that a person interviewed drinks coffee given that the same person drinks tea?

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2. The probability that a person interviewed drinks tea given that the same person drinks coffee?