

**Answer on Question #70922 – Math – Statistics and Probability  
Question**

A class have 100 students

A : student study history is 0.4

B: student study math 0.5

- a) calculate probability is that at least 1 student studied one of two subjects
- b) calculate probability is that none of the students studied one of the two subjects
- c) calculate probability is that 1 student study history, don't study math

**Solution**

Let  $A \cap B =$  'student study both math and history'.

a) The probability that at least 1 student studied one of two subjects is

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$P(A \cup B) = 0.4 + 0.5 - P(A \cap B) = 0.9 - P(A \cap B)$$

b) The probability that none of the students studied one of the two subjects is

$$P((A \cup B)^c) = 1 - P(A \cup B) = 1 - (0.9 - P(A \cap B)) = 0.1 + P(A \cap B)$$

c) The probability is that 1 student study history, don't study math

$$P(\text{History not Math}) = P(A) - P(A \cap B) = 0.4 - P(A \cap B)$$