Que1:

In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee?

Ans:

Let T, C be the set of students taking tea & coffee respectively

Number of students taking tea = n(T) = 150

Number of students taking coffee = n(C) = 225

Number of students taking both tea and coffee = n(T ∩ C) = 100

n(T ∪ C) = n(T) + n(C) − n(T ∩ C)]

$$= 150 + 225 - 100$$

$$= 275$$

Number of students taking either tea or coffee = n(T ∪ C) = 275

Number of student taking neither tea nor coffee

= Number of students not taking tea **and** number of students
not taking coffee

= Total number of students

− Number of students who like either tea or coffee

= 600 − 275

= 325

Hence, **325 students** were taking neither tea nor coffee.