Internal Assignment - 1

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Subject : Basic Mathematics

1. **State inclusion-exclusion principle. In a group of 50 people, 35 speak Hindi, 25 speak both English and Hindi and all the people speak at least one of the two languages. How many people speak only English and not Hindi ? How many people speak English**

   The inclusion-exclusion principle is a counting principle used to calculate the size of a set by considering the sizes of its subsets and their intersections. In this case, we can use the inclusion-exclusion principle to determine the number of people who speak only English and not Hindi.

   Let's denote the following:
   E = Number of people who speak English.
   H = Number of people who speak Hindi.

   We are given the following information:
   $E \cup H = 50$ (All the people speak at least one of the two languages)
   $H = 35$ (Number of people who speak Hindi)
   $H \cap E = 25$ (Number of people who speak both English and Hindi)

   If we consider
   $E - (H \cap E)$ = Number of people who speak only English and not Hindi
   $E - 25$ = Number of people who speak only English and not Hindi

   To find the number of people who speak English,
   $(E - 25) + (H \cap E) = E$
   $E - 25 + 25 = E$
   $E = 50$