

Answer on Question #42860 - Math - Combinatorics | Number Theory

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?

Solution

Let E — English, H — Hindi.

Step 1. There are 50 people in our set, among them 25 people speak both English and Hindi then $50 - 25 = 25$ people speak only English or only Hindi (complement of the set).

	25	25
E/H		E,H

Step 2. 35 people speak Hindi, among them 25 people speak both English and Hindi then $35 - 25 = 10$ people speak only Hindi.

15	10	25
?	H	E,H

Step 3. 25 people speak only English or only Hindi and 10 of them speak only Hindi then $25 - 10 = 15$ people speak only English.

15	10	25
E	H	E,H

Step 4. 25 (speak both English and Hindi) + 15 (speak only English) = 40 people speak English.

Answer:

15 people speak only English and not Hindi.

40 people speak English.