Answer on Question #82898 – Math – Statistics and Probability

Question

all the house in a housing estate have door communication system, twenty-two houses have door-phones and 12 have door bells while 14houses have both systems, find the number of houses in the estate

Solution

How many houses have BOTH systems?   14 houses

How many houses have door-phones?   22 houses. As 22>14, we can conclude that some of them may have both systems and some of them ONLY door-phones.

ONLY door-phones: 22-14 = 8 houses

How many houses have doorbells?   12 houses. As 12<14, we can conclude that these houses ONLY doorbells. Because it is impossible to have both systems not having doorbells.

The number of houses in the estate = ONLY door-phones + ONLY doorbells + BOTH systems =
= 8+12+14 = 34 houses.

Answer: the number of houses in the estate is 34 houses.