

Question:

Melanie is a door-to-door saleswoman. She sold a third of her vacuum cleaners at the green house, 2 more to the red house, and half of what was left at the orange house. If Melanie has 5 vacuum cleaners left, how many did she start with?

Reasoning + Answer:

<think>At the orange house, Melanie sold 2 more than half, so 2 less than half were left ($5+2=7$). This means half of what she started with is 7. She started with $7 * 2 = 14$ vacuum cleaners. The number she sold to the green house was $1/3$ rd of 14, which is $14/3 = 4 \frac{2}{3}$. Since she can't sell $\frac{2}{3}$ of a vacuum cleaner, we know she sold 4 of the green house. This means she sold 2 more than 4 to the red house, so $4+2=6$ to the red house. She started with 14 and sold 4 to the green house and 6 to the red house, so $14 - 4 - 6 = 4$. Adding those she had left, $4+5=9$ vacuum cleaners </think><answer>9</answer>

