Solution to Three Daughters Logic Problem

Ms. Know has three daughters.

The product of their ages is 36. So what are all the possibilities?

1 x 1 x 36

1 x 2 x 18

1 x 3 x 12

1 x 4 x 9

1 x 6 x 6

2 x 2 x 9

2 x 3 x 6

3 x 3 x 4

The sum of their ages is shown on the mailbox. We can’t see it but Mr. Wunder can.

What are the possible numbers he can see?

1 + 1 + 36 = 38

1 + 2 + 18 = 21

1 + 3 + 12 = 16

1 + 4 + 9 = 14

1 + 6 + 6 = 13

2 + 2 + 9 = 13

2 + 3 + 6 = 11

3 + 3 + 4 = 10

Mr. Wunder says “I need one more clue.” Why? Because two of the choices (1) have a product of 36 and (2) have a sum of 13. If it was any other combination of ages, Mr. Wunder would not need another clue. The choices are:

1 + 6 + 6 = 13 or 2 + 2 + 9 = 13

“The oldest one likes chocolate ice cream” tells us that the answer is **2, 2, and 9**. Some may argue that one of the six year olds would be some number of minutes older than the other, but the idea is that the nine year old is older than the twins. Had Ms. Knoe’s youngest daughter liked a certain flavor or ice cream, the answer would have been 1, 1, and 6.