

If Leah is 6 years older than Sue, and John is 5 years older than Leah, and the total of their ages is 41. Then how old is Sue?

Let L = Leah's age

Let J = John's age ($L + 5$)

Let S = Sue's age ($L - 6$)

We can solve by doing the following:

$$L + J + S = 41$$

$$L + (L + 5) + (L - 6) = 41$$

$$L + L + 5 + L - 6 = 41$$

$$3L + 5 - 6 = 41$$

$$3L - 1 = 41$$

$$3L = 42$$

$$L = 14$$

So if Leah is 14 years old, Sue is 8 years old (Leah's age minus 6) and John is 19 years old (Leah's age plus 5).

And to confirm ($14 + 8 + 19 = 41$).