We will learn how to lay out problems that are solved from a given equation.

For example, the equation:

$$x + 14 = 3\,x$$

has the solution:

On this basis we can lay out a real problem that must be solved by means of the described equation. A simple resource is to write a statement about numbers, "translating" into words what the equation is representing, that is to say:

"If a number is added onto 14 we will obtain the triple of that number. What is that number?"

Let's name x that number, the triple will be 3x, so we can now raise and lay out the equation. As the result is already known, we know in advance that the solution is 7, but we replace it to verify that the result is valid:

$$x - 3x = -14 \Rightarrow -2x = -14 \Rightarrow \frac{-14}{-2} = 7$$

So, 7 plus 14 is equal to 21, that is, the triple of 7.

This kind of problem might be laid out with real objects, such as coins, candies, etc.

For example:

"In a candy shop a child buys 14 lollipops, which results in him having three times the number of lollipops he already had. How many lollipops did he have initially?"

The problem can be solved with the same first equation since $x + 14$ represents the amount of lollipops that he has after buying, and $3x$ is triple the initial amount.

Therefore, the solution is that initially he had 7 lollipops.

Let's see another equation:

$$2x + \frac{x}{3} = 77$$

The solution is:

$$\frac{6x + x}{3} = 77 \rightarrow \frac{7x}{3} = 77 \Rightarrow 7x = 231 \Rightarrow x = \frac{231}{7} = 33$$

And a possible statement could be:

"If we add the double of certain number and a third of it, the result is 77. What is that number?."

That number is 33 because the double of 33 (66) and its third part (11) added together is 77:

$$2 \cdot 33 + \frac{33}{3} = 77 \Rightarrow 66 + 11 = 77 \Rightarrow 77 = 77$$

Continuing with another story of candies, an alternative statement might be the following one:

"How many chewing gums has a boy got if he says that the double of that amount plus the third part of what he has is equal to 77?"

The double of the amount will be $2x$ and the third part is $\frac{x}{3}$.

So our equation can be used to solve the problem, and the boy has 33 chewing gums.

And an additional statement might be involve the age of a person, for example:

"How old is Claire if twice her age plus a third part is 77?"

If Claire's age is x, the double is $2x$ and a third is $\frac{x}{3}$.

So the equation also is valid to solve the problem, and Claire is 33 years old.