

You may or may not know how to solve an exercise, but it does not need any previous thinking. To solve it one uses some sort of algorithm.

For example, for adding 37 and 25, we know the two numbers are placed one above the other and we apply the addition algorithm, a set of rules that we are supposed to know. For convenience we will use tables in our examples:

3	7
2	5
6	2

so the result of the sum is 62

We've solved an exercise.

Let's see how a problem would look like:

What are the values of A and B for this sum to be correct?

3	A
B	5
6	2

Here we need to think, though maybe just a little. Make some guess, find the numbers and check that everything works. Given the numbers we must find are between 0 and 9, the problem is simple: A can just be 7 so that $7 + 5 = 12$. We must keep 1 for the next column, $1 + 3 = 4$. How much we should add to get a 6? the answer is $B = 2$, which solves the problem.

How can you create a problem like this? The best thing you can do is to take a paper and a pencil and write any sum.

3	2	7
5	1	4
8	4	1

Now you can substitute some numbers by capital letters. Be careful though, because the problem might be then too difficult or even not posible. Let's try the following

A	2	7
5	1	B
8	B	1

We should now make sure that we could solve this problem. On the right column, it is clear that B should be worth 4 so that the result is 11. We keep 1 so, on the next column, we will have $2 + 1 + 1 = 4$. Everything works since B is still 4. Finally A has to be 3. The solution is then $A = 3$, $B = 4$.