

How Figure Out What 5 Times 15 Is

- (1) You could have memorized it in the past, and just remember the answer. I have done that problem so many times that I have memorized the answer, 75, without even trying.
- (2) You could have memorized the times tables up to 15 times 15 in the past, so you remember the answer. If you have a very good memory and are very bad at logic, this is the best method. If you have a photographic memory, you can just visualize a big times table and look for the answer. Of course, most people don't have photographic memories.
- (3) You could use a calculator. The problem with that is, you need to have a calculator handy, and it does take a little time to pick up the calculator and punch in the numbers. Calculators are great for 739 divided by 22, but for simple problems like 5 times 15 they aren't the fastest method.
- (4) You could use pencil and paper and solve it the way you were taught in school. For that, you need pencil and paper, and it takes a little time, just as with the calculator.
- (5) You could solve it the way you were taught in school to do on pencil and paper, but in your head. For this, you have to have the right kind of brain. Many people do. Many people can visualize a piece of paper (or use a wall) and a pencil writing. But some people, like me, have "aphantasia", meaning they can't see things in their heads, not even their mother's face. I can remember music— say, Beethoven's ghost trio— in my head and hear the music there, but I can't see things. So this method is no good for some of us.
- (6) You could remember that 12 times 5 is 60, if you've memorized your times tables up to 12 times 12 (which is a good idea, since lots of everyday problems require multiplying by 12, even though multiplying by 11 isn't very important). Then 13 times 5 will be 5 more than that, and 60 plus 5 is 65. Then 14 will be 5 more than that, and 65 plus 5 is 70. Then 14 will be 5 more than that, and 70 plus 5 is 75.
- (7) George Polya is famous for the Polya Conjecture, but maybe his most important contribution is his book, *How to Solve It*. He has a set of practical tips for how to solve math problems (and lots of other problems in life). The web page <https://math.berkeley.edu/~gmelvin/polya.pdf> summarizes them. I can maybe do it better, but I don't have time right now. Anyway, one of his ways to solve a hard problem is to break it up into easier problems that when combined will give you your answer. Another way is to ask "Is there a related, easier, problem that I can solve?" We actually did that in method (6). We'll do it again, a different way.
Let's divide 5×15 into two separate problems. We will use the fact that $5 \cdot 15 = \left(\frac{10}{2}\right) (15) = \frac{150}{2} = \frac{10 \cdot 15}{2}$.
First, 10 times 15 is 150, an easy problem to solve.
Second, 150 divided by two is 75, also a pretty easy problem to solve. Since 10 divided by 2 is 5, 150 divided by 2 must be 75, and we have our answer.
<https://blog.ung.edu/rsinn/think-vibrantly/2-polyas-4-steps/> is another webpage on the Polya method, with an example.
- (8) 5×10 plus 5×5 .
Again, let's divide 5×15 into two separate problems. We will use the fact that $5 \cdot 15 = 5 \cdot (10 + 5) = 5 \cdot 10 + 5 \cdot 5 = 50 + 25 = 75$.
First, $5 \times 10 = 50$ is an easy problem.
Second, $5 \times 5 = 25$ is an easy problem.
But since $5 + 10 = 15$, that means that adding 5×10 and 5×5 gives us 5×15 . So since $50 + 25 = 75$, that's our answer.
This is the way I actually do it, for problems whose answers I haven't memorized (remember method 1).