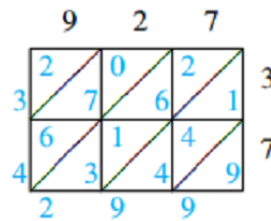


Practice 1.2 (September 26)¹

You have to fill this poll <https://goo.gl/forms/CDXubqHnFvwBynnj1> before Monday 25, 10 pm.

1. Make a drawing in a square grid to make a representation of 15×12 , and show how it can be used to compare the result with 14×13 , without any calculation.
2. Compute 45×36 using the ABN algorithm and the mayan algorithm, and explain why the algorithms work.
3. Study whether $a \times b$ is even or odd, in terms of the parity of a and b . Try to use an argument that can be used in Primary school.
4. What is the units digit of the following powers (explain your reasoning):
 - a) 31^{125}
 - b) 42^{99}
 - c) 53^{219}
5. Imagine that you have a weird calculator in which you can type only 2-digit numbers. Explain how you could compute the product 8700036×48 .
6. If today is Tuesday 9 am, what time and what day of the week was it 20 000 hours ago?
7. Find all 5-digit palindromic numbers in base 3 that are even numbers. (A number is palindromic if when read left to right is the same as when read right to left)
8. You have 1840 euros, and you have to give them to Alice y Bob, in the following ways:
 - a) First, in such a way that Alice gets 158 euros more than Bob.
 - b) Now, in such a way that Alice gets three times as much as Bob.

(Remember, problems must be solved without algebraic methods).
9. In the picture you can see an algorithm that computes 927×37 . Analyze it and explain why it works.



10. Based on the consumption of last year, the administrator of a block of flats estimated that the gasoil that he had bought should be enough for 80 days. Nevertheless, the winter was mild, and daily consumption was 3 liters bigger than the forecast. If gasoil was over after 70 days, how many liters of gasoil did he bought at the beginning of the winter?

¹All problems should be made without using a calculator. In the future, problems meant to be solved with the help of a calculator will be marked with the symbol ©.