

Practice 1.3 (October 4)¹

You have to fill this poll <https://goo.gl/forms/taeaUUBDWUVVTVIi1> before Monday 3, 10 pm.

1. Compute the following product using ABN algorithm and mayan algorithm: 45×36
Analyze why these algorithms work and think on their advantages and drawbacks.
2. Compare these two products without computing the multiplication.
$$835 \times 374 \qquad 834 \times 375$$
3.
 - a) Knowing that $61595 = 635 \times 97$, explain how you can compute quotient and remainder of 61695 divided by 97 without any long division.
 - b) Knowing that $61615 = 635 \times 97 + 20$, explain how you can compute quotient and remainder of 616951 divided by 97 without any long division. (For this item you may find convenient wait till Monday class).
4. If you know that when 64757 is divided by 439 the quotient is 147 and the remainder is 224, which are the quotient and remainder of dividing 64757 by 147?
5. Find all numbers bigger than 4800 and smaller than 5000 that have remainder 15 when they are divided by 47. (Nov 2014)
6. If today is Monday 9 am, what time and what day of the week was it 10 000 hours ago?
7. What is the units digit of 37^{102} ? Explain your reasoning.
8. 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 .
9. Which day of the week will be September 29 2055? Remember: multiples of 4 are leap years. (Juneo 2015)
10. We know that when D is divided by d the quotient is 82 and the remainder is 45. We also know that D is smaller than 4500. Find all pairs of numbers (D, d) fulfilling these properties.
11. 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).

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 ©.