

Advanced Complexity Theorie

SS 2011, Exercise Sheet #9

EXERCISE 14:

- a) Try to improve Proposition 5.8 from the script by splitting the polynomial f into *three* parts containing i) the coefficients with index a multiple of three, ii) those with index congruent 1 modulo 3, and iii) those with index congruent 2 modulo 3. What do you get?
- b) Find a straight-line program to compute the integer polynomial

$$3X^6 + 2X^5 + X^4 - 2X^2 - 2X - 2$$

from X and some integers using only 3 nonscalar multiplications, 2 multiplications by integers and 6 additions/subtractions.