

Assignment 5

1. Write an assembly function that that, given a real number x , computes the cubic root $x^{1/3}$. Note that this is defined for any real number. A method to calculate it is here:

http://en.wikipedia.org/wiki/Cube_root#Cube_root_on_standard_calculator

You can apply this method to $|x|$, and then fix the sign of the result.

2. Compute a real root of the cubic equation

$$x^3 + ax^2 + bx + c = 0$$

where a, b, c are real coefficients. Use Cardano's method at

http://en.wikipedia.org/wiki/Cubic_function#The_case_of_a_cubic_equation_with_real_coefficients

where the expression for the roots is in the **Summary** section. Use the expression for u with only the + case in front of the square root, after you check whether the expression $\frac{q^2}{4} + \frac{p^3}{27}$ under the square root in the calculation of u is non-negative (if it is negative, this is not a real number, so output a "Not a real solution" message).