

Homework 15

Stark Theory

Imagine you get the following trace

0,3,6,9,12,15

from your program (which simply adds 3 to the previous value.)

Write out the constraints for this trace, in terms of i, j where i represents the step and j the column.

2. Polynomial practice

for

$$p(x) = x^3 - 5x^2 - 2x - 4$$

a) find an integer root a , i.e. $p(a) = 0$ (clue < 5)

b) write this in terms of a lower degree polynomial $q(x)$

such as $p(x) = (x - a)q(x)$

What are the degrees of $p(x)$ and $q(x)$?

Note we are doing this over the real numbers, for zero knowledge proofs we would use a finite field

Oracles

Using this [code snippet](#) as a guide, write a contract with a view function to return the median price for BTC/USD