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

Details :

```
const EMPIRIC_ORACLE_ADDRESS =
0x012fadd18ec1a23a160cc46981400160fbf4a7a5eed156c4669e39807265bcd4
const KEY = 28556963469423460  # str_to_felt("eth/usd")
const AGGREGATION_MODE = 120282243752302  # str_to_felt("median")
```