Remedial Problem Solving 2

Matthew Kennedy Jones — Spring 2023

The prime game

p_1 p_2

$p_1 \mid n$

$p_2 \mid n$

$p_1 \neq p_2$

$\gcd(p_1, p_2) = 1$

A: Even

A: Even

A: odd

A: Even

A: ..

$\boxed{\begin{array}{l} \forall i \in [n/2] \\ x_i + x_{i+1} \end{array}}$

If A: even $\to$ p_1

If A: odd $\to$ p_1

Sorted permutation tree

Step 1. | DFS that we defined

Find the lexographical ordering.

$n = n_1$

$x_i \in [1, n-1]$

$n_1 = n_2 + x_1$

$n_2 = n_3 + x_2$

$n_3 = n_4 + x_3$

$n_4 = 1$

$\Rightarrow x_1 = 5$

A: "$x_1 x_2 x_3$" $\to$ 4

A: "$c_1 c_2 c_3$" $\to$ 4

A: "$a_1 a_2 a_3 a_4$"

$x_1 = 1$

$x_2 = 2$

$x_3 = 1$

$x_1 = 1$

$x_2 = 1$

$x_3 = 1$

$x_4 = 1$

$\Rightarrow x_1 = 1$

$\Rightarrow x_2 = 1$

$\Rightarrow x_3 = 1$

$\Rightarrow