3-coloring on paths

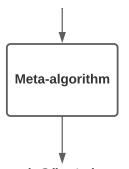**Meta-algorithm**

Lower bound: $\Omega(\log^* n)$ rounds
Upper bound: $O(\log^* n)$ rounds
Thus, the problem is solvable in $\Theta(\log^* n)$ rounds