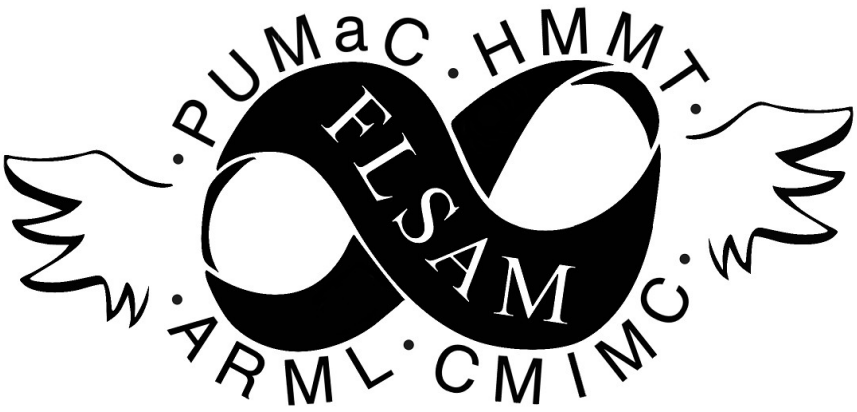
Florida Student Association of Mathematics



2026 FLSAM PUMaC Tryout

October 10 – 11, 2026

Round 3: Combinatorics

Welcome to the **2026 FLSAM PUMaC Tryout!** This is round three of four, each of which will consist of four problems to be completed in 30 minutes. There is no penalty for wrong answers. Good luck!

Answer Format:
All answers must be **fully simplified**. Restrictions include but are not limited to fully reduced fractions, rationalizing denominators, and fully simplifying radicals. All reasonable fully simplified forms will be accepted in the case that multiple exist.

1. Arnav starts with the string `0112223333`. A *whorl* reverses any three consecutive characters. Compute the number of distinct strings that can be obtained through some sequence of whorls.

2. Each letter of the alphabet is placed in a distinct cell of a 2×13 rectangular grid. Compute the number of ordered pairs of cells that can contain `a` and `z` such that there exists a sequence of edge-adjacent cells containing `a`, `b`, ..., `z` in order.

3. Four alligators, two dolphins and four crocodiles swim in a line, in that order from front to back. Each second, two adjacent animals swap places. After the fewest possible seconds, the four crocodiles are at the front and the four alligators at the back. Each animal records, in order, which animals it swapped with. Compute the number of different collections of ten records that are possible.

4. Every cell of a 4×4 grid is initially colored white. A *move* consists of choosing a row or column and coloring all four of its cells either all black or all white. Call a coloring of the grid *peelable* if it can be reached by some sequence of moves. Compute the number of peelable colorings.

Q1	Q2	Q3	Q4