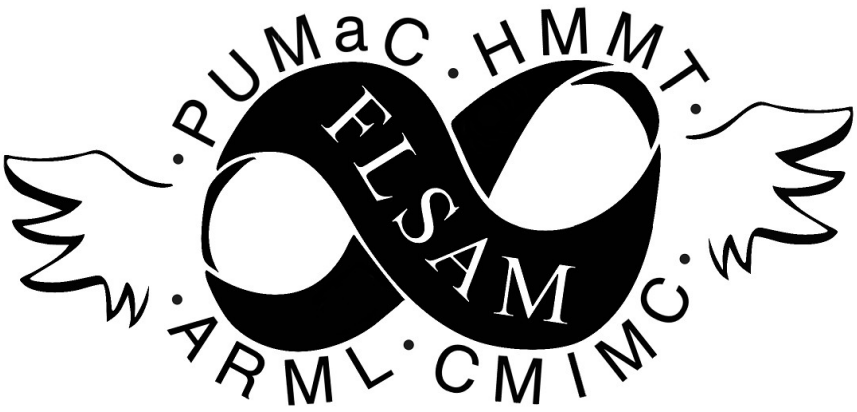
Florida Student Association of Mathematics



2026 FLSAM PUMaC Tryout

October 10 – 11, 2026

Round 2: Geometry

Welcome to the **2026 FLSAM PUMaC Tryout!** This is round two 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. Point P lies inside regular hexagon $ABCDEF$ such that triangle ABP and pentagon $CDEFP$ have areas 20 and 26, respectively. Compute the area of $ABCDEF$.

2. Let $ABCD$ be a parallelogram. A circle is tangent to sides AB, BC, and CD intersects side DA at points X and Y such that $DX = 2$, $XY = 30$, and $YA = 10$. Compute the area of $ABCD$.

3. Let ABC be a triangle such that $\angle ACB = 2\angle ABC$, and let P be a point such that $PB = PC = 6$ and $AP = AC = 18$. Compute the area of triangle ABC.

4. Let ABC be an acute triangle with circumcircle Ω. The perpendicular bisector of BC meets lines AB and AC at P and Q, and the circumcircle of triangle APQ meets Ω again at $X \neq A$. Given $XB = 18$, $XC = 42$, and $PQ = 60$, compute the area of triangle ABC.

Q1	Q2	Q3	Q4