

Putnam $\Sigma.7$

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1 Problems

Po-Shen Loh will unfortunately be in Boston during our usual discussion and dinner time. However, you are welcome to come to work on the problems. There will probably be a group doing that anyway.

Putnam 2001/A4. Triangle ABC has area 1. Points E, F, G lie, respectively, on sides BC, CA, AB , such that AE bisects BF at point R , BF bisects CG at point S , and CG bisects AE at point T . Find the area of triangle RST .

Putnam 2001/A5. Prove that there are unique positive integers a, n such that $a^{n+1} - (a+1)^n = 2001$.

Putnam 2001/A6. Can an arc of a parabola inside a circle of radius 1 have a length greater than 4?