

# The William Lowell Putnam Mathematical Competition

takes place Saturday, December 3, 2010.

In 2010, the Stanford team placed seventh.

**Sign-up and Introductory Meeting**  
**Mon. Sept. 26, 6:00 pm, in Bldg. 380– Room 383N**

We will also meet regularly on Monday evenings from 6PM for the problem-solving preparatory sessions (a.k.a. the Polya Problem-Solving Seminar, or as the 1 credit course Math 193). If you can't make it and are even potentially interested, please e-mail [ksound@math.stanford.edu](mailto:ksound@math.stanford.edu).

For more information: <http://math.stanford.edu/~ksound/Polya.html>

## *Sample problems:*

1. (Polya) If a side of a triangle is less than the average of the other two sides, then the opposite angle is less than the average of the other two angles.
2. (IMO 1972) Let  $m$  and  $n$  be non-negative integers. Prove that  $m!n!(m+n)!$  divides  $(2m)!(2n)!$ .
3. Find all  $x$  such that for all  $n \in \mathbb{N}$

$$\sin x + \sin(2x) + \dots + \sin(nx) \leq \frac{\sqrt{3}}{2}.$$