Virginia Tech Math Contest, Oct. 27

Location: Lockett Hall Registration Deadline: Sep. 28

Putnam Exam, Dec. 1

Location: Lockett Hall Registration Deadline: Oct. 5

Math Problem-Solving Seminar!!

Every Wednesday, 5:00 - 6:30 P.M. Third-Floor Lockett Lounge

Open to any **Undergraduate**† Student

Free Pizza dinner provided!!

† Calculus (MATH 1550) is a prerequisite.

Are you interested in challenging and fun Math Problems? Attend the weekly Problem-Solving Seminar and sign up to represent LSU in national Competitions! Everyone is welcome: you do **not** need to be a math major! Sample problems:

- Without using a calculator, determine which quantity is larger:

$$\sqrt[2018]{2018} \quad \text{or} \quad \sqrt[2017]{2017}\,?$$

- Evaluate the following integral – this can be done **without** finding an antiderivative!

$$\int_0^2 \frac{x\sqrt{1+x^2}}{\sqrt{1+x^2}+\sqrt{5-x^2}}\,dx = ?$$

- There are 2018 points around a circle, and 1009 of them are colored Purple, and 1009 are Gold, in any order. Is it always possible to draw a set of straight lines such that (i) each line connects two vertices of opposite colors, and (ii) none of the lines intersect?

- Note that $2^4 = 16$. Are there are any other powers of 2 such that the **only** decimal digits are 1's and 6's?

  Similarly, $2^5 = 32$. Are there are any other powers of 2 such that the **only** decimal digits are 2's and 3's?

To register or learn more about the Competitions, please attend the Problem-Solving Seminar, visit the website below, or write to Professor Karl Mahlburg.

e-mail: mahlburg@math.lsu.edu

Website: www.math.lsu.edu/∼mahlburg/teaching/Putnam.html