



SWARTHMORE COLLEGE  
PROBLEM-SOLVING GROUP

**Are you interested in working on challenging puzzles and creative math problems?**

**Join Us as We Prepare for the Putnam Mathematics Competition!**

**Sample Problem 1**

2 students play a game based on the total roll of two standard dice. Student A wins if a 12 is rolled first, and Student B wins if two consecutive 7s are rolled first. If the students keep rolling the dice until one student wins, which student is more likely to win?

**Sample Problem 2**

Does there exist a continuous real-valued function  $f : \mathbb{R} \rightarrow \mathbb{R}$  satisfying the functional equation

$$f(f(x)) = -x?$$

**Sample Problem 3**

Show that  $n^4 + 4^n$  is NOT a prime number for all integers  $n > 1$ .

**Informational meeting starring:**

- **Snacks**
- **Information about the Putnam exam**
- **Some challenging and creative math problems**

**Wednesday, September 9th @ 4:30 PM in the Math Lounge**

**If you have any questions or cannot attend the meeting, please email Prof. Johnson at [mjohnso3@swarthmore.edu](mailto:mjohnso3@swarthmore.edu)**