

# Department of Mathematics and Computer Science

## Colloquium Kickoff

September 4, 2009

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Friday, September 4, 4:10

COLLOQUIUM

Speaker: Dr. Patrick Coulton

Old Main 2231

Title: "An Elementary Problem in Logic and Number Theory"

**Abstract:**

Hans (Freudenthal) concocts a little game for his friends Sam and Patty. Choosing two numbers each greater than one but also less than 30, he secretly tells Sam the sum and he secretly tells Patty the product. Sam and Patty are not allowed to discuss the values that they are given and yet they are challenged to find the two original numbers.

Patty says, *I can not find the numbers.* Sam then says, *I knew that you could not find them.* Patty responds, *Oh, then I know what the numbers must be.* Sam replies, *Now I too know the numbers.*

How is this possible? Patty and Sam have the advantage of knowing more than we do. Can we solve this problem with the little information we have? The problem was originally stated for two numbers less than 100. This of course makes the problem much more difficult as there are many more cases to consider. I will discuss the general problem.

Hint: Sam's number is 17 and Patty's numbers is 52.

SNACKS IN FACULTY LOUNGE AT 3:30 PM.  
EVERYONE WELCOME (EVEN IF YOU ARE UNABLE TO ATTEND THE TALK)

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