

MANY CHEERFUL FACTS

presents

691, Most Irregular Prime

a talk by Jared Weinstein

1:10 pm - 2:00 on Wednesday, September 7th, in room
1015.

Primes, like people, can sometimes be irregular. In this talk we will explain what it means for a prime to be irregular, why the regular primes are in the minority, and also why the equation

$$\sum_{n=1}^{\infty} \frac{1}{n^{12}} = \frac{691}{638512875} \pi^{12}$$

poses a severe hindrance to proving that

$$x^{691} + y^{691} = z^{691}$$

has no solutions in nonzero integers x , y and z , at least as of 1850.

◦ Check out the MCF website: <http://math.berkeley.edu/~brownda/cheers/>

*I am the very model of a modern Major General,
I've information vegetable, animal, and mineral,
I know the kings of England, and I quote the fights historical
From Marathon to Waterloo, in order categorical;
I'm very well acquainted, too, with matters mathematical,
I understand equations, both the simple and quadratical,
About binomial theorem I'm teeming with a lot o' news,
With many cheerful facts about the square of the hypotenuse!*

- Gilbert & Sullivan $P \circ P$