

MANY CHEERFUL FACTS

presents

A Theorem of Finite Group Theory

a talk by John Zhu

11:10 am - 12:00 on Wednesday, February 1st, in room
1015.

There is a famous result from group theory that states, given integers a , b , c all greater than 1, there exists a finite group containing elements x of order a , y of order b , and yx of order c . An equally well known "theorem" is that despite the fact that permutation groups contain as subgroups all finite groups, they are usually an ineffective tool in this area of research. In this lecture, we present a forceful counterexample to this latter creed, proving the theorem by a constructive approach using cycles.

*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 $P \circ P$