

MANY CHEERFUL FACTS

presents

Computation on Groups

a talk by Gary Sivek

12:10 – 1:00pm on Wednesday, February 21, in room 1015.

Given a description of a finite group, it's often easy enough for a person to determine several fundamental properties, such as commutativity, size, nilpotence, solvability, etc. What if instead of the group itself, you merely have some arbitrary generating set? More importantly, what if you're not a human, but a computer? I will discuss some of the basics of algorithms on groups, prove some useful and fascinating (nay, *cheerful*) facts, and, most impressively, I will talk for an hour about computation without once mentioning Wolfgang Gröbner.

*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 $P \circ P$

The website for Many Cheerful Facts is
<http://www.math.berkeley.edu/~slofstra/mcf>