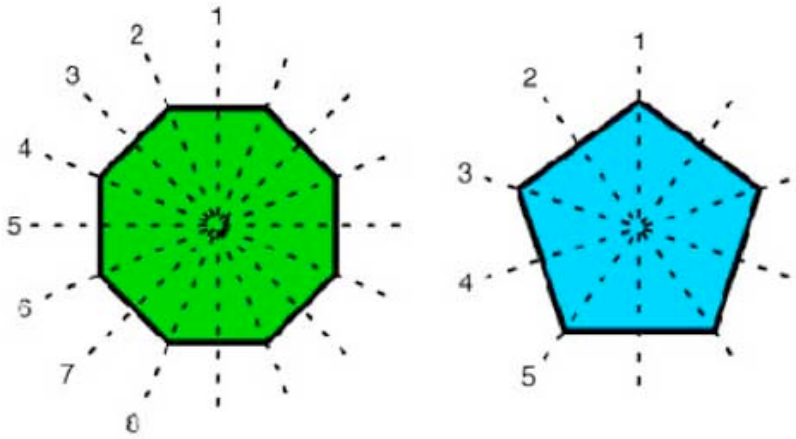
Claremont McKenna College, Spring 2013
MATH 171: Abstract Algebra I



Instructor: Lenny Fukshansky, Adams Hall 218, (909) 607 - 0014, lenny@cmc.edu
Time: Mondays and Wednesdays, 1:15 – 2:30 pm

Prerequisites: MATH 60 or instructor's consent. I am happy to talk to anybody interested in this course, and in particular to discuss if his or her background is sufficient.

Text: Abstract Algebra (3rd edition), by David S. Dummit and Richard M. Foote (published by John Wiley & Sons, Inc.)

Course Description: We have used binary operations, such as addition, subtraction, multiplication, and division since elementary school, and are used to taking them for granted. But what does it really take to define such an operation on an abstract set and make sure that it ``works properly"? What properties does a given binary operation induce on a set? How can one describe geometric notions, such as symmetries of a regular polygon algebraically? All of these and many more related questions will be answered in this course.

The course will introduce the fundamental structures of abstract algebra, including groups, rings, fields, vector spaces, and functions between them. Some beautiful connections with number theory will also be discussed. Abstract Algebra is in the core of modern mathematics, and its knowledge is crucial for any serious mathematics student.

Grading: Based on regular homework assignments, one or two midterms, and a final.

Registration is open to students from all of the Claremont Colleges, and I am happy to talk to anyone interested in this course!