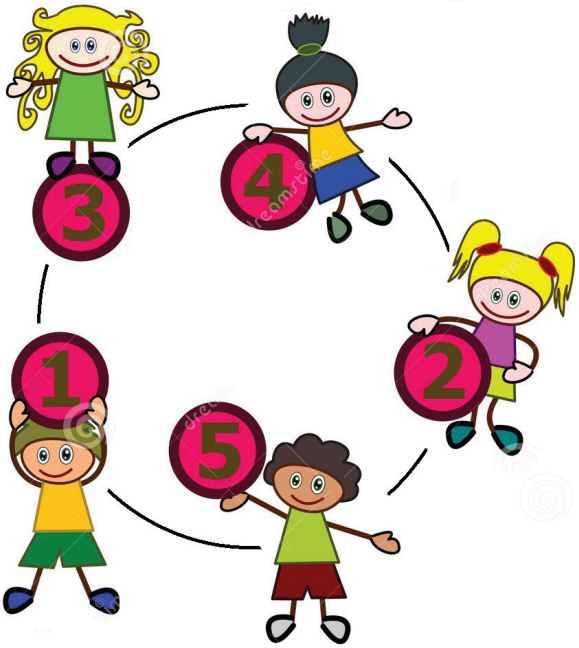
Problem of the Block
Block 3



Bad arrangements

The numbers 1,2,3,4, 5 are to be arranged in a circle. An arrangement is *bad* if it is not true that for every n from 1 to 15 one can find a subset of the numbers that appear consecutively on the circle that sum to n. Arrangements that differ by only a rotation or a reflection are considered to be the same.

Problem 1. How many different bad arrangements are there?

Problem 2. Rewrite this problem for the numbers {1,2,3} and {1,2,3,4} instead of {1,2,3,4,5}. Can you solve these problems?

Turn in solutions to Dr. Skorczewski in Law 204 or by email at tskorczewski@cornellcollege.edu by November 27. Partial solutions will receive credit (and are encouraged!). You can turn in a solution to just one question and turn in a solution to another question on a different day. The winning solution which earns the bonus points for the yearly competition will be the submission that is the best written, not necessarily the first. Submitting solutions to the Problem of the Block may earn culture points toward the math major. For more information about the Problem of the Block and to print off your own copy visit http://www.cornellcollege.edu/mathematics/problem-of-the-block/index.shtml.