

Day 2 — 8/29/03

Office hours were given:

MWF 11:00 AM- 12:00 PM

W: 2:00 PM – 4:00 PM

Office location: Science & Technology building C-121

Class discussed the “15 puzzle”

Demonstration with “8 puzzle” (see below)

1	2	3
4	5	6
7	8	

8 puzzle

Volunteers were assigned in pairs to teams 1-6. Each team was then given a scrambled puzzle to solve with their team number being the number of switches on the puzzle (i.e. team four had four numbers changed in their puzzle). Odd numbers of switches were unsolvable while even numbers of switches could be solved.

Defined Identity permutation.

The identity permutation is the original arrangement of the elements

Demonstration with numbers on the floor.

The numbers 1-8 were placed in order on the floor and the students were handed a piece of paper with a pair of numbers on it. As the pair of numbers on their piece of paper were switched in and out of order the students would change positions in the classroom.

Defined Parity.

The parity of a permutation is the number of out of order pairs, this number is either even or odd.

Worksheet 1 handed out.

Learned 3 methods for determining parity

1. Count the number of reversed pairs to find parity
2. Write out the identity permutation below the original then draw curves to connect the numbers. The number of intersections on these curves is the parity
3. Swap pairs until the identity permutation is reached. If the number of swaps is even, then the permutation has even parity. If odd then the permutation is odd

Homework from Wednesday, August 27 is due on Wednesday, September 3.