

## Worksheet 6

1. Let  $\sigma = (1\ 2\ 3\ 4\ 5\ 6)$ .
  - (a) Compute  $\sigma^2$  and  $\sigma^3$ . (Remember this means  $\sigma \circ \sigma$  and  $\sigma \circ \sigma \circ \sigma$ , respectively.)
  - (b) Compute  $\sigma^7$  and  $\sigma^{2025}$ .
2. Line up in alphabetical order by first name.
  - (a) The person who is *first* in alphabetical order move to the opposite end of the line. Then try to get back into the original order by a sequence of moves, where in each move any two people standing next to each other can change places.
  - (b) Same thing, but now, start off by lining up in *random* order.