The Lecture Title

Scribe: Your Name

Date: Day, Mon, Date Year

1 A Small Theorem

Theorem 1.1. *Any permutation can be written as a product of transpositions.*

Here are some examples:

π	Product of Transpositions
(123)(45)	(12)(13)(45)
(1234)	(12)(13)(14)
(13)(425)(67)	(13)(42)(45)(67)
(12345)	(12)(13)(14)(15)

From here, we can obtain the *sign* of a permutation by the parity of the number of transpositions - if there are an even number of transpositions required, they are considered even and positive, and vice versa.