

Title

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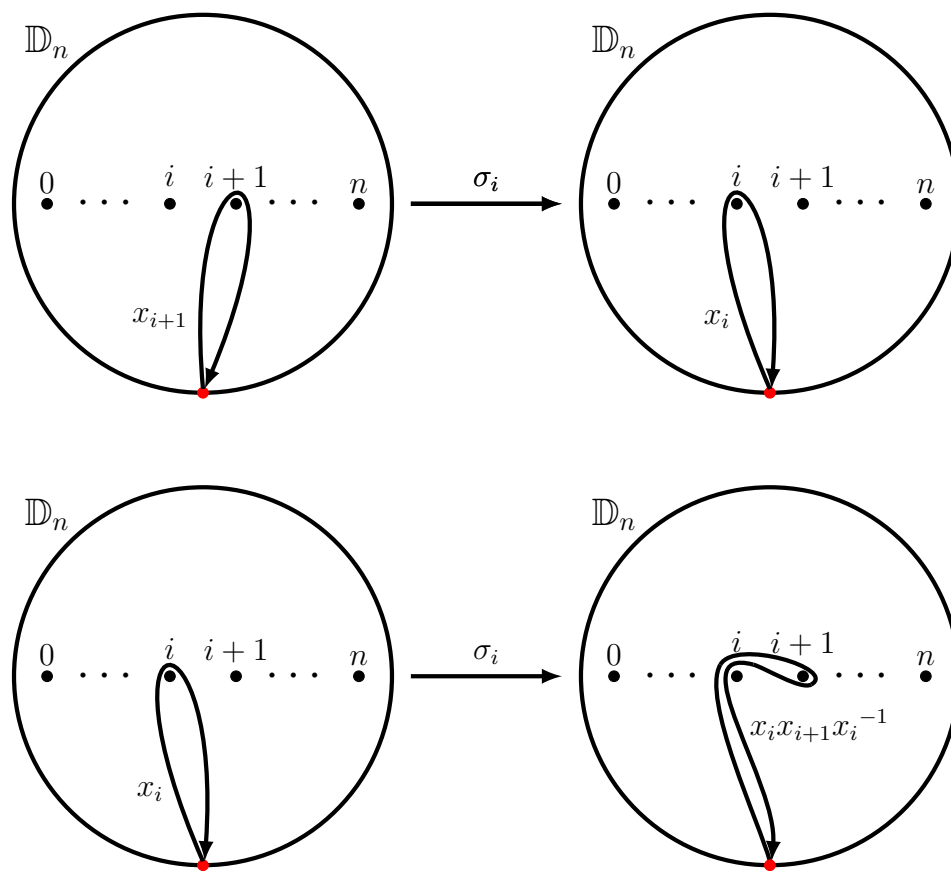
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# Chapter 2

## tikz test



# References

- [1] E. Artin. Theory of braids. *The Annals of Mathematics*, 48(1):101, January 1947.
- [2] W. Fulton. *Algebraic Topology: A First Course*. Graduate Texts in Mathematics. Springer New York, 1997.
- [3] Juan Gonzalez-Meneses. Basic results on braid groups, 2010.
- [4] Christian Kassel and Vladimir Turaev. *Homological Representations of the Braid Groups*, page 93–150. Springer New York, 2008.
- [5] Dale Rolfsen. Tutorial on the braid groups, 2010.
- [6] Jean-Luc Thiffeault. The bureau representation of the braid group and its application to dynamics. Presentation given at Topological Methods in Mathematical Physics 2022, Seminar GEOTOP-A, September 2022.
- [7] Wu-Ki Tung. *Group theory in physics: An introduction to symmetry principles, group representations, and special functions in classical and quantum physics*. World Scientific Publishing, Singapore, Singapore, January 1985.