## Notes on "Basic Geometry of Voting" by Saari

## hisanobu-nakamura

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1 Chapter 2

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Transitive linear orders

 $c_k \\ c_i \succ c_j$ 

Order relations with ties

 $\begin{array}{cccc} c_k & c_k \\ \swarrow & \swarrow & \swarrow \\ c_i & \sim & c_j & c_i & \sim & c_j \end{array}$ 

Equivalent relations

 $c_k$   $c_i \sim c$ 

Cycles

 $c_k$   $\succ$   $c_i \succ c_i$ 

Non-transitive, non-cycles

 $\begin{array}{cccc}
c_k & c_k \\
 & & \\
c_i & \sim c_j & c_i & \sim c_j
\end{array}$