Algorithms and Bioinformatics
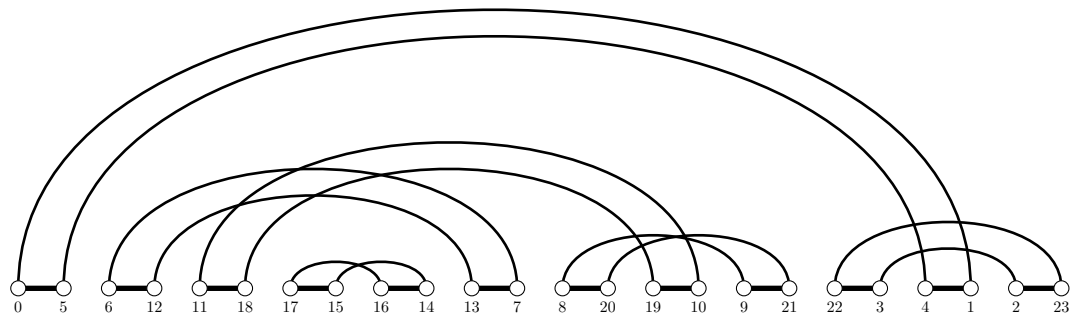# Comparative Genomics
TD 2

Question 8. Draw the breakpoint graph for the signed permutation

$$\langle -4, 3, -2, -5, 1 \rangle$$

Question 9. In the breakpoint graph of $\langle 3, -6, -9, 8, -7, 4, -10, -5, 11, 2, 1 \rangle$:

- Identify good and bad cycles, components and hurdles
- Give a lower-bound for its signed reversal distance and an optimal sorting scenario

Question 10. Give pairwise MCSP distances between the following strings (ignore capitals and white-spaces)

- `Arrange A String`
- `A Staring Ranger`
- `A Garnering Tsar`

Question 11. Find a pair of strings for which Greedy behaves as badly as possible (i.e. maximizing the approximation ratio)