

7. Exercise “Bioinformatische Methoden in der Genomforschung”

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Due: 13.12.2021

Exercise 1 (5 Points)

Given the signed permutations A and B as follows:

A = (0 2 1 -3 6 4 5 7 -15 -13 -14 16 -12 -10 -11 -9 8 17)

B = (0 -5 4 3 -2 7 8 9 10 1 6 11)

1. Find all elementary intervals of the two permutations and point out which elementary intervals are oriented
2. Find all cycles of the two permutations

Exercise 2 (5 Points)

Given the permutation π and a breakpoint b in π . Show that two elementary intervals exist that meet in b .

Exercise 3 (5 Points)

What can be observed if an oriented elementary interval is inverted? Give an explanation for your observation

Exercise 4 (5 Points)

Show that a cycle always contains an even amount of oriented elementary intervals.