

## 2. Exercise “Bioinformatische Methode in der Genomforschung”

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Assignment: 1.11.2021

Due: 8.11.2021

### **Exercise 1** (3 Punkte)

Describe the usual goals of a DNA-microarray analysis

### **Exercise 2** (2 Punkte)

What are main difficulties in probe selection for a DNA-microarray?

### **Exercise 3** (5 Punkte)

Describe if the shortest-common-supersequence problem is important for microarray production.  
Motivate your answer

### **Exercise 4** (10 Punkte)

Given the following probe sequences: TATTGCCGTA, CTCATCCTGA, GACAGTCTCC, ACCAGCTGGC, GAATCTTAGT, GCCTTGTGCA, ATGGCACATT, AATGCGTAGC, CGGCGAGTCA, CGAGTATTCC as well as synthesis sequences  $(ACGT)^*$ ,  $(GCAT)^*$ ,  $(TGCA)^*$ ; Calculate the leftmost embedding for each and determine the shortest synthesis sequence for each of the three.