The tightest layout

1. Let $P_1 = \{a, b\}, P_2 = \{b, c, d\}, P_3 = \{a, c, d\}, P_4 = \{a, c\}$ and assume the ordering of clones is 1, 2, 3, 4.
   - Check if 1, 3 is an excluded pair.
   - Find the tightest layout of clones.
   - Find a mapping of probes.

2. Let $P_1 = \{a, b, c\}, P_2 = \{b, c\}, P_3 = \{a, c\}, P_4 = \{a, b, c\}, P_5 = \{a, b\}$ and assume the ordering of clones is 1, 2, 3, 4, 5.
   - Check if 1, 4 is an excluded pair.
   - Find the tightest layout of clones.
   - Find a mapping of probes.

3. The algorithm for clone placement when placing clone $k$ finds the smallest $i^* < k$ such that $i^*, k$ is a permitted pair. What is the largest possible value of $i^*$ and why?