For all the problems, if it is related to an algorithm, you have to type and submit a hard-copy. For problem not related to algorithms (for example, writing a paragraph about ...), handwritten submission is fine. Please write your name and solutions as clear as possible. The due date will be announced after finishing Chapter 3.

4. Given the input text length is \( n \), and the pattern string length is \( m \), analyze the best-case and worst-case performance of the pattern matching algorithm we covered in Chapter 2. Note you only have to point out the number of comparisons in each case since which is the central unit of work.
6. Given the input: \( 0_1, 2, 0_2, 0_3, 5 \).

   Give the output after completion of the shuffle-left, copy-over, and converging-pointers algorithm, respectively.
7. Select one of the following problems, and write a small paragraph to explain what this problem is. Make your statement as clear as possible. You can use figures to illustrate.
   A. Bin-packing problem B. Graph-coloring problem C. Travelling salesman problem D. Subset-sum Problem