Problem 1
Do problems 6.30 and 6.40 in the book.

Problem 2
Do problem 7.7 and 7.10 in the book. For problem 7.7, if we break the \( mn \) size problem into two \( ij \) and \( (m-i)(n-j) \) size problems, we need \( ij \approx (m-i)(n-j) \). Find a curve describing the relation between \( i \) and \( j \), the path of the optimal alignment must cross that curve.

Problem 3
For the spliced alignment problem, improve the running time of the algorithm by using the idea of sorting the end points of intervals, and scanning those points to detect when an interval is entered and when an interval is exited.