1. A core metric that most computer scientists use to analyze “performance” is time. In Java, one way to measure this is by using `System.nanoTime()`.

2. Name two searching methods and their algorithmic complexity (how long they take as a function of the input size).
   (a) Linear Search. Linear time complexity \(O(n)\)
   (b) Binary Search. Logarithmic time complexity \(O(\log n)\)

3. Name three sorting methods and their algorithmic complexity (how long they take as a function of the input size).
   (a) Bubble Sort. Quadratic time complexity \(O(n^2)\)
   (b) Selection Sort. Quadratic time complexity \(O(n^2)\)
   (c) Merge Sort. Loglinear time complexity \(O(n \log n)\)