1. (50 pts) The following code is supposed to implement the binary search algorithm. Fill the blanks so that it works correctly. The binarySearch method takes an integer array “list” and an integer “key” as inputs. It returns the position of “key” in “list” if “list” contains “key”; otherwise returns -1;

```java
public static int binarySearch( int[] list, int key) {
    int low = 0;
    int high = __________;
    while (___________) {
        int mid = (low + high) / 2;
        if (key < __________)
            high = __________;
        else if (key == list[mid])
            return mid;
        else
            __________;
    }
    return -1;
}
```

2. (50 pts) The following code is supposed to implement the selection sort algorithm. Fill the blanks so that it works correctly. The selectionSort method sort the input array “list” in ascending order.

```java
public static void selectionSort(double[] list) {
    for (int i = 0; __________; i++) {
        double currentMin = list[i];
        int currentMinIndex = __________;
        for (int j = i + 1; j < list.length; j++) {
            if (________________) {
                currentMin = list[j];
                __________;
            }
        }
        if (currentMinIndex != i) {
            __________;
            list[i] = currentMin;
        }
    }
}
```