NUMBER 3

The plots for all searches are similar. However, As the input size increases for linear search the time increases until it gets to a fairly constant time no matter the increase in data. The best case scenario for jump search is constant. For sorted array, interpolitan search works better than binary. Binary Search always goes to the middle element while interpolation search can go to different places.Jump search takes shorter time than linear search.

NUMBER 4

The best case for linear search is O(1) while the worst case is O(n). The best case for a binary search is to locate the target item in the data structure on the first look, so it's O(1).The worst case is looking for an object that is not in the results. In this situation, it would remove half the list to search for each time the algorithm did not find the target, so it's O(log n).

The best case for binary search is O(1) while the worst case is O(log n).

The best case for jump search is O(1) while the worst case is O(√ n).

The best case for interpolation search is depending on the data distribution. Interpolation search time complexity differs. For uniformly distributed data with the time complexity of O(log(log(n))). In the worst case it can take up to O(n).