

1. Suppose an vector contains the following elements:

-31 -27 -9 14 17 18 29 30 48

Determine the number of comparisons needed to find each element in the vector using a binary search. For example, three comparisons are needed to find -9.

2. A binary search is used to determine whether an element is in an ordered list. If there will be 4 entries examined by the search in the worst case, then the list contains at most how many entries?
3. A binary search locates the desired element of an ordered list at the second entry that it examines. If the element actually occurs as the 23 entry of the list, then list all the POSSIBLE entries in the list?
4. What is the order of the linear search? the binary search?
5. What special conditions must be meet before using the binary search?
6. What is the least number of comparisons needed for the linear search? the most?
7. What is the least number of comparisons needed for the binary search? the most?
8. On average, how many comparisons will the linear search need?
9. On average, how many comparisons will the binary search need?