

# Math 2013 - Introduction to Discrete Mathematics

Quiz #12 - 2005.11.09

Solutions

---

Consider the following ordered array which contains 22 elements:

0	2	3	4	5	5	7	9	10	10	12	14	16	17	12	14	15	16	16	18	19	20
---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----

1. How many steps will it take to find  $key = 7$  if one uses the linear search algorithm proposed in the book? Be sure to justify your answer.

Since the linear search algorithm searches from the right and goes to the left, it will take 16 steps to find  $key$ .

2. How many steps will it take to find  $key = 7$  if one uses the binary search algorithm proposed in the book? Be sure to justify your answer.

Since the array is not sorted, we cannot use the binary search algorithm.