Question 1　　　　　　　　　　　　　　　　　　　　　1 / 1 point

Divide and Conquer always yields a more efficient solution than Brute Force.

- ○ True
- ✓ ⦿ False

Question 2　　　　　　　　　　　　　　　　　　　　　1 / 1 point

Thor is a brute force kind of dude. He always uses linear search to find items in arrays. But ever since his friend Athena told him about binary search he has been using it ... for everything! He even uses it on unsorted arrays!

What he does is something like this:

// Let A[0..n] be an unsorted array
// Let K be a search key
// 1. sort the array using his favorite sort (bubble sort)
// 2. use binary search to find the target in the new sorted array

Question: what is the worst case efficency class (best big-oh class) of Thor's 2-step approach?

- ○ $O(n^3 \log n)$
- ○ $O(n)$
- ✓ ⦿ $O(n^2)$
- ○ $O(1)$
- ○ $O(n^2 \log n)$
- ○ $O(n \log n)$
- ○ $O(n^3)$
- ○ $O(\log n)$

Question 3　　　　　　　　　　　　　　　　　　　　　1 / 1 point

Consider the array H=[7,6,6,1,2,3].

Which one of the following statements is correct?

- ✓ ⦿ This array represents a valid heap.
- ○ This array does not represent a valid heap.

Question 4　　　　　　　　　　　　　　　　　　　　　0 / 1 point

Algorithms that make use of the idea of "presorting" are:

- ○ Input Enhancement Algorithms
- ➡ ○ Transform and Conquer Algorithms
- ○ Brute Force Algorithms
- ○ Decrease and Conquer Algorithms
- ✗ ⦿ Divide and Conquer Algorithms

Question 5　　　　　　　　　　　　　　　　　　　　　1 / 1 point

The *merge* procedure used by MergeSort can merge two sorted arrays in O(n) time.

- ✓ ⦿ True
- ○ False