

✓ **Congratulations! You passed!**

TO PASS 1% or higher

Keep Learning

GRADE
100%

Interview Questions: Elementary Sorts (ungraded)

TOTAL POINTS 3

1. **Intersection of two sets.** Given two arrays $\mathbf{a}[]$ and $\mathbf{b}[]$, each containing n distinct 2D points in the plane, design a subquadratic algorithm to count the number of points that are contained both in array $\mathbf{a}[]$ and array $\mathbf{b}[]$.

1 / 1 point

Note: these interview questions are ungraded and purely for your own enrichment. To get a hint, submit a solution.

Subquadratic Algorithm!

✓ **Correct**

Hint: shellsort (or any other subquadratic sort).

2. **Permutation.** Given two integer arrays of size n , design a subquadratic algorithm to determine whether one is a permutation of the other. That is, do they contain exactly the same entries but, possibly, in a different order.

1 / 1 point

Permutation or not!

✓ **Correct**

Hint: sort both arrays.

3. **Dutch national flag.** Given an array of n buckets, each containing a red, white, or blue pebble, sort them by color. The allowed operations are:

1 / 1 point

- $swap(i, j)$: swap the pebble in bucket i with the pebble in bucket j .
- $color(i)$: determine the color of the pebble in bucket i .

The performance requirements are as follows:

- At most n calls to $color()$.
- At most n calls to $swap()$.
- Constant extra space.

how? That's crazy.

✓ **Correct**

Hint: 3-way partitioning.