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## Exercises: Mergesort

To specify an array or sequence of values in an answer, you must separate the values by a single space character (with no punctuation and with no leading or trailing whitespace). For example, if the question asks for the first ten powers of two (starting at 1), the only accepted answer is:

```
1 2 4 8 16 32 64 128 256 512
```

If you wish to discuss a particular question and answer in the forums, please post the entire question and answer, including the seed (which is used by the course staff to uniquely identify the question) and the explanation (which contains the correct answer).

### Question 1

```
(seed = 103872)
```

Give the array that results immediately after the 7th call to merge() when top-down mergesorting the following array:

```
Y Q V L I X O K E H A C
```

### Question 2

```
(seed = 657216)
```

Give the array that results immediately after the 7th calls to merge() when bottom-up mergesorting the following array:

```
W A H P U T Y Z O F
```

### Question 3

```
(seed = 414272)
```

Suppose that you run the Graham scan algorithm on the following set of points:

```
A (2.0, 5.0)
B (1.0, 2.0)
C (6.0, 6.0)
D (5.0, 9.0)
E (9.0, 8.0)
F (7.0, 7.0)
G (4.0, 3.0)
H (0.0, 4.0)
I (8.0, 1.0)
```

## Quiz

J (3.0, 0.0)

Give the sequence of points not on the convex hull in the order that they are discarded by the algorithm. To specify a point, use its letter, not its coordinates.

☐ In accordance with the Honor Code, I certify that my answers here are my own work.