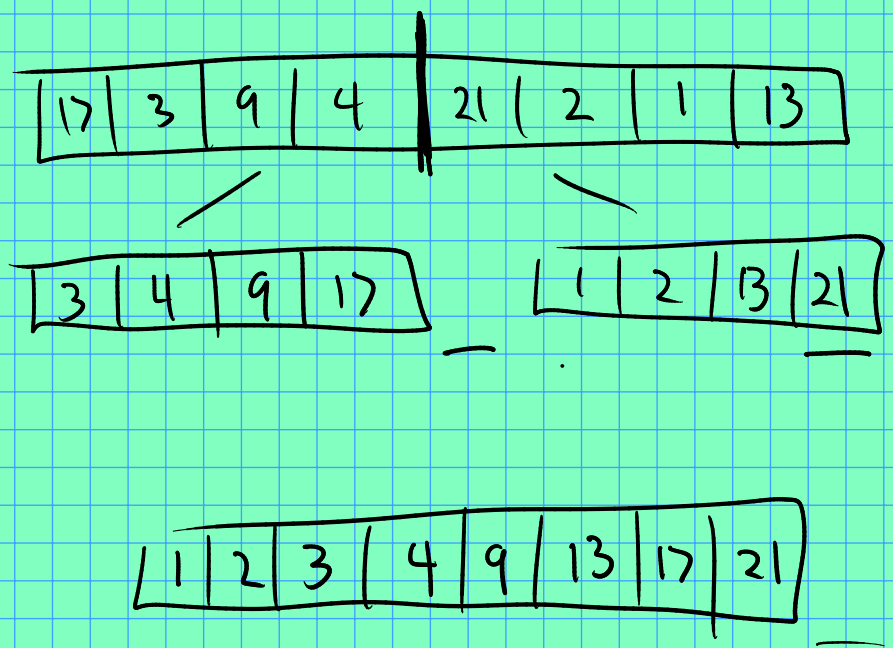
More Recursion!!

Merge Sort.

Idea: using the magic of recursion, sort left and right sub arrays. Then combine them, which hopefully is not much work.



Back to Fibonacci... Can we make the recursive version perform better?
What was the mistake/issue with the original recursive version? It duplicated a lot of work (it forgot about computing f(n-1), and had to do it again from scratch.)
Maybe solution: give the function memory.

```
int fib(int n, Answers A)
{
```

A ← table of input/output values.

```
if (n < 2) return 1;
// check table for answer before making more calls!
if(A has an answer for n)
        return A[n];
a = fib(n-1, A) + fib(n-2, A);
A[n] = a;
return a;
}
```