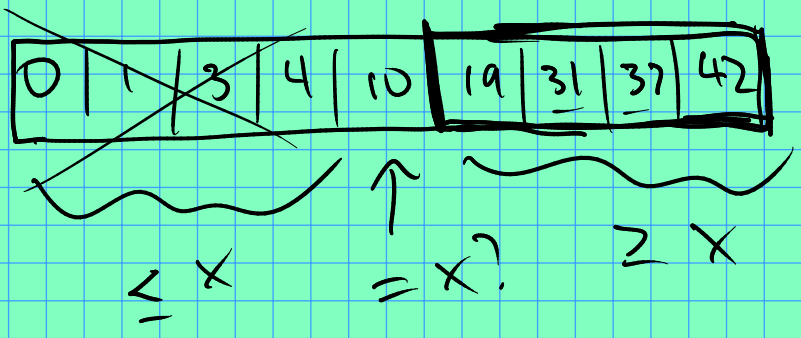
From the TODO's: binary search:

$x \in V$? say $x = 31$



$\leq x$ $= x$? $\geq x$

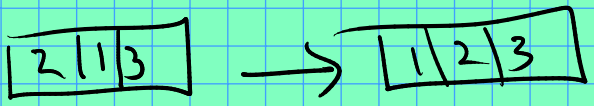
```
bool search(const vector<int>& V, int left,
            int right, int x);

// Return true ⟺ x is found
   in V[left, ..., right]
```

Example: Sorting.

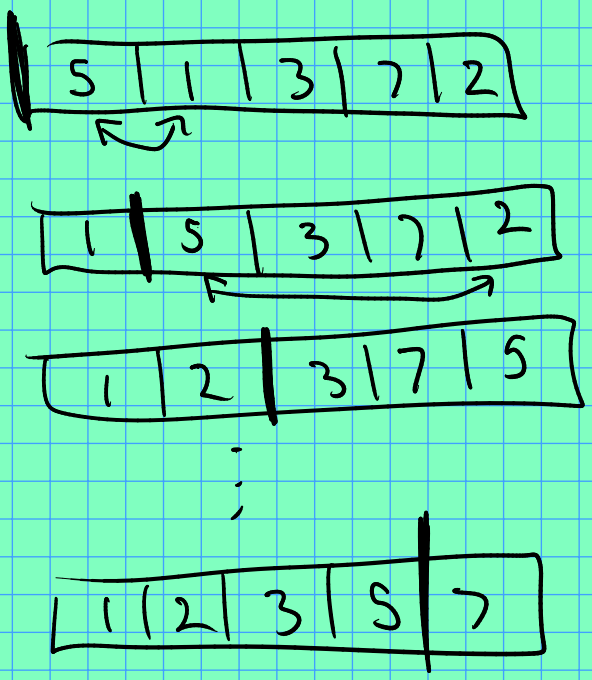
Goal: rearrange vector elements so that

$0 \leq i \leq j < V.size() \Rightarrow V[i] \leq V[j]$.

E.g. 

Simple idea: "selection sort": find the smallest element and swap it with whatever is in $V[0]$.

Now apply the same process to $V[1, \ldots size-1]$.


5 1 3 7 2
1 5 3 7 2
1 2 3 7 5
1 2 3 5 7