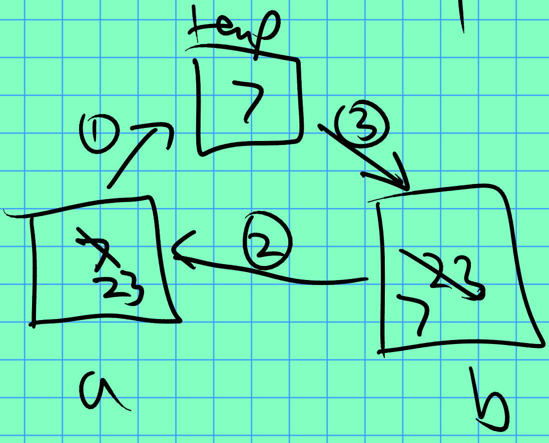
Exercise: write a function to reverse a vector.

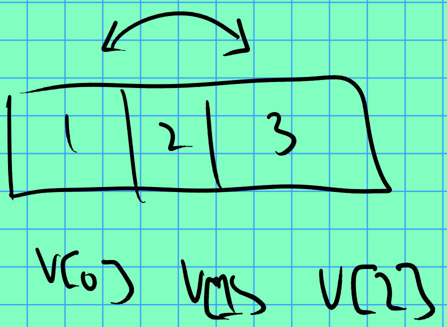
```
void reverse(vector<int>& V)
{   size_t n = V.size();
    for(size_t i = 0; i < n/2; i++){
        // swap V[i] <-> V[n-i-1]
        int temp = V[i];
        V[i] = V[n-i-1];
        V[n-i-1] = temp;
    }
}
```

V[0] <-> V[n-1]
V[1] <-> V[n-2]
⋮
V[i] <-> V[n-i-1]



Usage:

```
int main()
{
    vector<int> V = {2,4,6,8,10};
    reverse(V);
    // Now V = {10, 8, 6, 4, 2}
```



Example: Binary search.

```
bool search(const vector<int>& v, int x)
{   // is x ∈ v ?  answer ≈ log_2 n steps
    // Note: v must be sorted !
    int mid = v.size()/2;
    if(x < v[mid])
        // search v[0,...mid-1]
    else if(x > v[mid])
        // search v[mid+1,... v.size()-1]
    else
       return true;
```