ASTEROID COLLISION

In this problem, we are given an array of integers where each integer's magnitude represents the size of an asteroid and its sign represents direction of traversal.

Eg : -4 travels to left
$+4$ travels to right

Asteroids travelling in opposite directions collide and bigger one survives while retaining its size.

We have to return remaining array of asteroids. In case of equal magnitude, both sign asteroids are lost.

We apply a monotonic stack approach to this. We iterate through the array until positive asteroids run out (at each step add them to your stack). Then when we run into a negative, we keep destroying them.

Pseudocode :

```
asteroidCollision(arr, N) {
    stack <int> st;
    vector <int> ans;
    for(int i=0; i<N; i++) {
```

```
        if(arr[i] > 0)  {
            st.push_back(arr[i]);
        } else {
            while(!st.empty() && st.top() > 0
                                && st.top() < abs(arr[i])){
                st.pop();
            }
            if(!st.empty() && st.back == abs(arr[i]
                st.pop();
            } else if(st.empty() || st.top() < 0){
                st.push(arr[i]);
            }
        }
    }
    while(!st.empty) {
        ans.push_back(st.top());
        st.pop();
    }
    return ans;
}
```