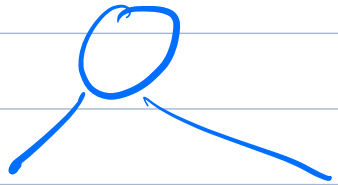
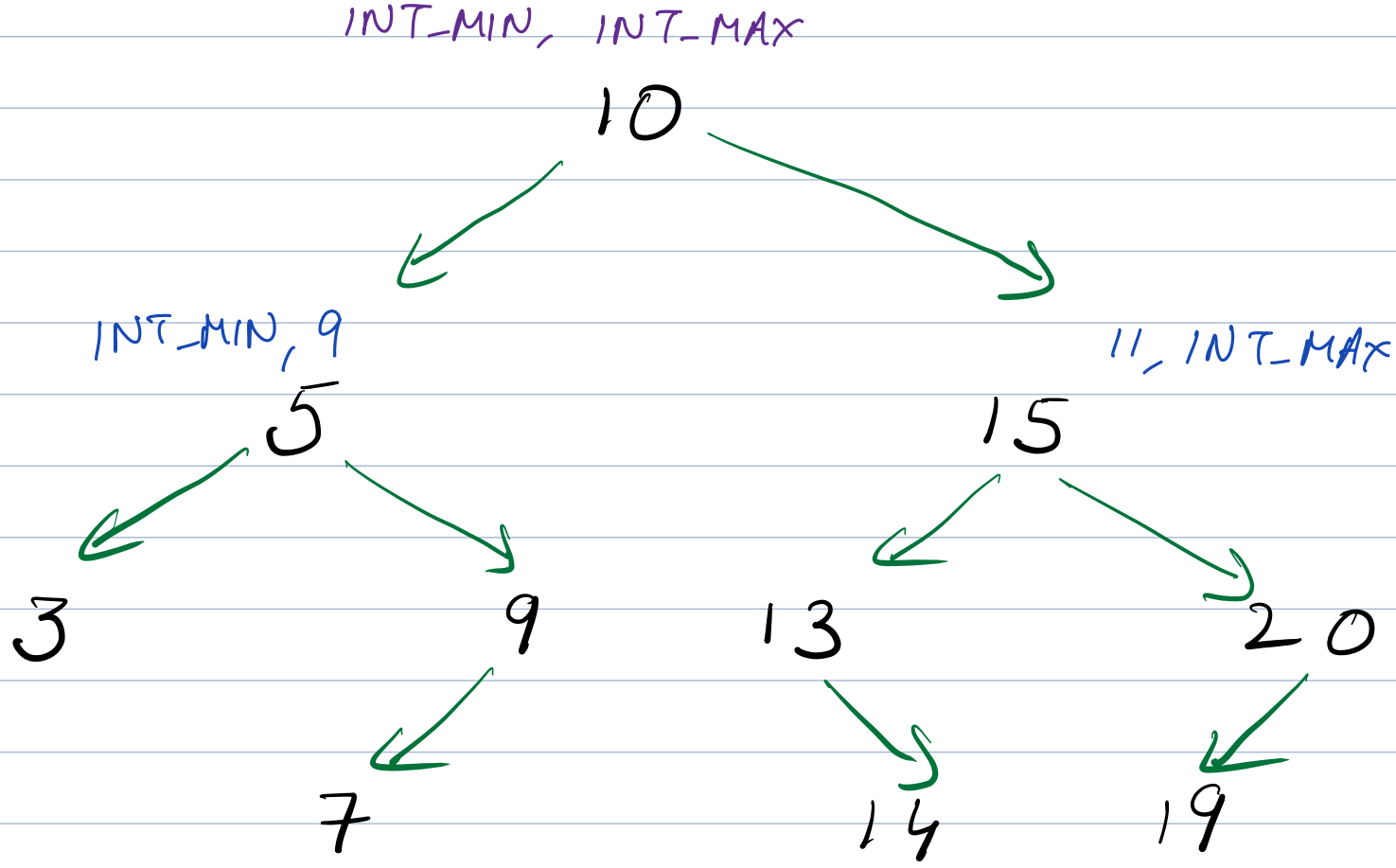
Q1 Check if given tree is BST ?



everything smaller

everything bigger



Q2 Asteroids can collide with sheild in any order.

If $A >= B[i]$, $A = A + B[i]$

$A = 10$ $B = \{14, 3, 2\}$

$A = 4$ $B = \{2, 9, 2\}$

idea: sort asteroids on basis of size

```
sort(B)
long A
for(i=0; i<n; i++){
    if(A >= B[i]){
        A = A + B[i]
    }
    else
        return false
}
return true
```

Q3 Winner stone

smash 2 heaviest stones x & y

x == y (both destroyed)

x != y x is destroyed & y becomes y - x

Eg → A = {2, 3, 9, 12}

Idea: Use maxheap

Code

```
maxheap <int> mh
for( i=0 ; i<n ; i++){
    mh.insert(arr[i])
}

while (mh.size > 1) {
    x = mh.getmax()
    mh.removemax()
    y = mh.getmax()
    mh.removemax()
    if(x==y)
        continue
    else {
    mh.insert(x-y)
    }
}
```

```
if ( mh.empty() ) {
|     return 0
}
else
    return mh.getmax()
```