3 Sum

- Given an Array, find 3 numbers that sum up to 0
- Assume all values are unique

Option 1: Brute force

```
result = []
for i1 in (0, n)        O(n)
  for i2 in (i1, n)     O(n)   } O(n^3) time complexity
    for i3 in (i2, n)   O(n)
      if ( n(i1) + n(i2) + n(i3) ) = 0
        result.append ( <a,b,c> )
return result
```

Option 2: Use 2sum

```
3sum {                          O(n^2)
  sort(nums)
  for n in nums:        O(n)
    2sum(-n)            O(n)
```

need away to exclude n

2sum(-n, i) ← Only allow for nums greater than our index

```
2sum(target, start, nums){
    2 sum code — dictionary

3
```