Single Number (136)

Extremely good use of XOR operator. Trick is that

(i) XOR of a number with itself is 0.

(ii) XOR is associative and commutative.

(iii) Also, $num \wedge 0 = num$.

So, $a \wedge (c \wedge d) \wedge (b \wedge e) = a \wedge b \wedge c \wedge d \wedge e$.

So, take XOR of all elements, the value left would be the single number.

CODE

```cpp
int singleNumber ( vector <int> & nums) {
    int res = 0;
    for (int i=0 ; i< nums.size(); i++){
        res = res ^ nums[i];
    }
    return res;
}
```