2

```
inv_count = 0
for i  0, ..., n
    for j  1, ..., n-1

        if  A[i] > A[j]
            inv_count ++
return  inv_count
```

3

If $|S| = 1$ return the one card

if $|S| = 2$

test if the 2 cards are equivalent

return either card if they're equivalent

Let S_1 be the set of the first $\lfloor n/2 \rfloor$ cards

Let S_2 be the set of the remaining cards

Call the algo recursively for S_1.

If a card is returned

then test this against all other cards

If no card with majority equivalence has yet been found

then call the algo recursively for S_2.

If a card is returned

then test this against all other cards

Return a card from the majority equivalence class if one is found