HW 5

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1) a) {2,1,3}, {2,3,3}, {3,2,3}.

The worst cases are when the smallest or largest element is the pivot

b) $$_nP_r = \frac{n!}{(n-r)!} = \frac{n!}{(n-n+1)} = \frac{n!}{(1)!} = n!$$

$2n!$

2)
```
int median(int arr[]){
    int temp[arr.size()/5];
    int counter=0;

    for(int i=0; i<arr.size(); i+1){
        if(i+1%5==0){
            temp[counter]= insertionsort(arr[i-4...i]);
            counter++;
        }
    }
    insertionsort(temp[]);
    return(temp[arr.size()/10]);
```

3) bool sum(double arr[], double s){

```
for(int i = 0; i < arr.size(); i++){
  for(int j=i+1; j<arr.size(); j++){
    if(i != j && arr[i] + arr[j] == s)
        return true;
  }
}
return false;
}
```