1) (10 pts) ANL (Algorithm Analysis)

With proof, determine the Big-Oh run time of the function, f, below, in terms of the input parameter n. (Note: You may use results from algorithms studied previously in COP 3502 without restating the full proof of run time.)

```
#include <math.h>

int f(int array[], int n) {
    return frec(array, 0, n-1);
}

int frec(int array[], int lo, int hi) {

    if (lo == hi) return array[lo];

    int left = frec(array, lo, (lo+hi)/2);
    int right = frec(array, (lo+hi)/2+1, hi);

    int i, lCnt = 0, rCnt = 0;
    for (i=lo; i<=hi; i++) {
        if (abs(array[i]-left) < abs(array[i]-right))
            lCnt++;
        else
            rCnt++;
    }
    if (lCnt > rCnt) return lCnt;
    return rCnt;
}
```