```
a evoid fi(int n)

(int i=2;
while(i< n)(
/* do something that takes 0(1) time */
i = i*i;
)

= 12 etarting at 2

2, 14, 16, 250

2, 12, 12, 12, 12, 12

2, 12, 24, 25 ether sup is doubling only involved?

2, 12, 14, 15, 25 ether sup is doubling only involved?

2, 12, 14, 15 ether sup is doubling only involved?

for 2, 2 mas 0 kines 1g1=0

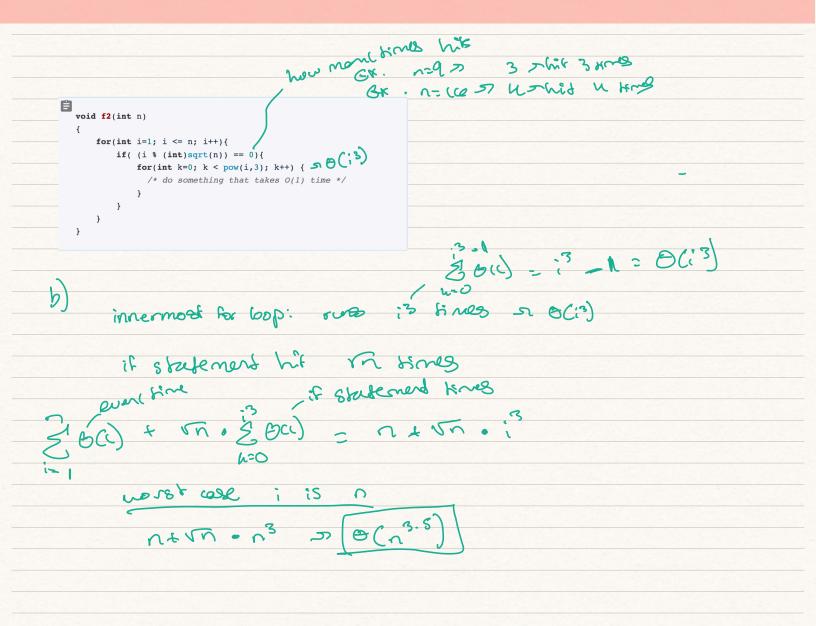
if n= 16, 2 mas 1 sines 1g2=1 8 mbm its

if n= 16, 2 mas 2 kines 1g2=2 always count up

if n= 16, 2 mas 3 kines 1g2=3

(o god powers of 2 have do 1g only would

s 1g(18(a) 2 8 7 1g(8) 23 1
```



HW1 Q3

```
m: (,2,4,8,60 ; n was (4, 5 rims ) glet
  c) inermost.
                  really m2 are in
            0 ((g(n) + )-1) = 0 (logn)
                       worst case rever single one is equal
      if( A[k] == i) {
  for(int m=1; m <= n; m=m+m) { > b(log)}
        // do something that takes O(1) time
        // Assume the contents of the A[] array are not changed
         second for loop - 2 ologn) - no logn - o(n logn) for second f
         $186 800 100P 2 & B(a(a) 2 no aloga 20210ga
                   Qualine'. Teen = O (nologn
                                          3 kines 2 ent swing over is
d)
             int f (int n)
              int *a = new int [10];
                  if (i == size) 50, 15, 22.5, 33.75
               int size = 10;
               for (int i = 0; i < n; i ++)
                     int newsize = 3*size/2; 3.322 OCC
                     int *b = new int [newsize];
                     for (int j = 0; j < size; j ++) b[j] = a[j]; 7 0(5 120)

delete [] a;

a = b;

size = newsize;
                  a[i] = i*i;
   innermost for loop: & loci) = size-1 recsized
            33.75/1.6- 225/1.5 = 15/1.5=10
                             if n was this
        3275-10-115 J# 08 Hores con
```

