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Jwt2126

2.15.

```
int x = 1;

Int len = a.length;

while (x <= len) {

mid = (x+len)/2

if (a[mid] == mid) {

System.out.println("value found") ;

x = len + 1;

}

else if (a[mid] > mid) {

len = mid -1;

}

else {

i = mid + 1;

{
```

2.6. a)

$2^{2^{\wedge}}(N-1)$

$D = 2^{2^{\wedge}(}N-1)$

$Log(D) = log(2^{2^{\wedge}}(N-1))$

$Log(D-2) = 2^{N-1}$

$Log(log(D-2) - 2) = N-1$

N = Log(log(D-2) - 2) + 1

2.11

a)

500/100 = X/0.5, X = 2.5

b)

500log500/100log100 = X/0.5, X = 3.3737

c)

$500_2/100_2$ = X/0.5, X = 12.5

d)

$500_3/100_3$ = X/0.5, X = 62.5

2.1

a)

2/N, 37, $N^{1/2}$, N, Nlog(logN), NlogN, Nlog(N^2), $Nlog_{2N}$, $N^{1.5}$, N^2, (N^2)log(N), N^3, $2^{n/2}$, 2^N

b)

i)

Nlog(N_2) and NlogN have the same growth rate.

ii)

O(NlogN) = O(Nlog(N_2))

= O (N*2*log(N))

= O (N*log(N))

3.

a)

O (N)

b)

O (N^2)

c)

O (log N)