as the lower bound.
You can then describe it in one breath as being in thete of such and such instead of saying it's in big o and in some po of something else. X
> What is the input to each of these dunctions?
tokes. So in fact, let make this more concute withon
Some have & doctors which represent on orange
of memory and his array of memory is maybe thring Fintegers and we might actually wout to search for
(ARPHY OF UELLORY)
> And it we wout to search for these voleces, how might
un go bout doing this? Uny dout we note things intuiting? "
2 SEARCHING LOCKERS
So here we have & Jockers on on orray of momercy.

And behind of shere doors is a number. And the gool, quite
simply is airen this about of memory as input to entire
simply is, given this assay of numery or input, to return, true or false, is the number I core about actually there?
The species of the real species of the species of t
So suppose I core obort the number of what well
be the simplest, most correct algorithm you could opply
in order to find us the number of
but let me just onk you to describe what is it you did
but let me just one you to describe what is it you did
by following the steps I gove you.
of the second
" I just went one by one to each character. " " It's not
the most allicent usuate in is "
the most efficient may to doit"
W. S.
* Some see a contrast here between correctness and design.
I do think it was correct because wenthough it was slow,
you eventually hand zero. But it took some number of
steps. Durin Last, this would be an algorithm and has a
nome, colled
Kinear Search
As you did, you did, you kind of walked along a line
dana from left its sight = 0 - 0-10
to left would the close than a face had bone from aight
daing from lift its sight. If you had some from right to left, would the algorithm have been four kinds -
" You is
· · · · · · · · · · · · · · · · · · ·

_ "Oly and whey?"	14.16.41
" Becouse the zero is here in the 12 surais, !	out it Muzero
us in the middle, it wouldn't have been.	
The same of the sa	La Mak
"So in the general case, going left to right	or right to
left, is mosably as correct as you can get because	se if you
left, is probably as correct as you can get buse und know rathing about the ORDER of these rum! indeed, they seem to be fairly random.	bers-ond
indeed, they seem to be fairly wordows.	
a company to the second	14
Linear Search is about as good as your	on do
Winear Search is about as good as your when you don't know oneything a priori as	act the
numbers.	zaisla j
which was a distributed to the fire	MOCK
- PSEUDOCODE -	
We just need a tense English or ony lo	nguage, lyn-
tax to describe what we did.	Music mela-
Thul word or was change to a change to	and the
For each door, know left to right, it know	umber is be-
hind the door, return true.	
and it is a superior of parties while harries to	11-15
For each door, from left to right ' If the number is behind the door	ginta
	Psudocode.
Return druce	in the
Reduct Lalle	30 ga 4 8
Sex of the ruy end of the program, yo	x would
voturn folse by defoult	
the prostalement and out the the	E LOUPING

able that to do not to at le con and a life and and
code to something a little LOWER LEVEL.
whelve been writing and wine a soul hours and the
we've been writing code using (n) and loops and the
like, get a middle ground between English and C?
For i from 0 to n-1 And notice this
It number behind doors [i] posternhere
Return dru
Return holse named this away
- 1- it - will will be southing your thous see mile
Now I'm Kind of mixing English and Chure, but that's seasonable it dhe reader is familiar with C or some vinilar
seasonable it dhe reader is hamiliar with C or some while
-donniege.
Shis is a way of just saying in pseudo code, give myself a saidse colled is start at 0 and men just count up to n-1, and reale n minus livear
give myself a saidle called in start at 0 and men
me sound de man de not pond recole n minus livror
one shy of the end of the oracy.
n-lin the und of the organistics
eaunting at 0.
Long the popular of the second
Loop from the left de the way to the eight of an aray.
of loop from the left of the way to the light of an around
doors [i] means that when i is o, it's this laction [o]
uhem ishis 1, it's [1] and in uhum i = 6, [n-1], the lost one location. So it's the some idea site translation of it.
recorder. Do us que some idea but a translation of lit.

So now let's consider (what the running time of this algorithm
is If we have this mine of possible onxues to this
question, how efficient or inefficient is this algorithm?
Lecones, 1 mass alless.
It's take a look in the context of this pseudocode we
1- 11 august de la la la la la la la la coma alla Mar mary to C. Hau do
don't even have to bother point all the way to C. Haw do use go bout ordyzing woch of these steps?
are do sont ought and noon of sure with in
P For is from 0 to n-1
Ja mu bust on a shall pointh with yell nich while
1
Anot line of code is going to execute how many times?
Entimes Beaux it's from O
State of the state
Sodhis this is essentially the some
1
loop is gaing mathematically as from 1 to h.
0 0 0
to operate national
ntimus!
to sperate
ntimus!
ntimus! 71 number behind doors [i]
ntimes! The number behind doors [i] Law many steps or seconds does it take hoosk
ntimus! 71 number behind doors [i]
ntimes! 2 The number behind doors [i] Low mony steps or seconds does it take hoosk a question of
ntimes! 22 Th number behind doors [i] Law many steps or seconds does it take hoosk

to seturn drue?
I want know expetly in the computer & minory
but that feels like a single step, just return true.
gens and some some some some some some some some
It looks like you've doing a constant number of thing
It looks like you've doing a constant number of thing or times or maybe you've doing one additional step.
So in short, the only thing that really nature have
un terms of the efficience or wedficiency of the deseithm
is what are you doing again and again and again, because
is what are you doing again and again and again, because that's diastly the thing that's gaing to add up.
- Note in the latter of the forest of the latter of the la
Dang 1 thing or 2 things a constant numbar of times ? Not a big deal!
of times O Not a sig deal!
But looping, that's gaing to add up our time because
the more doors here are, she biggern is going to be and
the more steps shorts soins to take which is all to bu
in you were to describe roughly how money steps
olds and affecting ago haven into might
your instincts say?
How mony steps us this alporithm on the
order of given notors or nintigers 2 4
그 아내는 그는 그들이 하는 문에 가는 이 그는 그는 그들이 하는 아들이 되었다. 생각이 되었습니다 아내는 아내는 그는 그는 그를 모르는 것이 없어 없어요?
0(nlogn) 0(logn)
0(nlogn) - 0(logn)

Voule dais a dising
You're doing in things as an upper bound on sunning time and that's, in fact, what exactly what happened. The had
to look at all nelockers before finally getting to the right
onsurer.
- Cristian - Constant to the second of the s
But what it she got lucky and the number we we-
reloding former Not of the end of the errory but war
et du bissone d'alle surce de
et the signing of the oring?
OMEGA NOTATION -> lawerboard. >
D(n2)] So grisen dhis name of possible
2(nlogn) sunning times for James hande
8
(logn) notation be for Nomira's diving much?
Becoure it just by obscripe whome she gets
luckey and the number the's lacking for is sight three
where she begins the objection, that sit. It's ONE STEP.
Hard ill Oak of June for the worlder the deep of
Maybe its & steps if you have to unlack the door and
apenut, but it is a constant number of steps.
I he way we desurbe constant number of steps is just
Ahrway we describe constant number of steps is just with a single number like (1). So the arrige notation for
Unical search might be omego of & because in the sext
case, she night just get the number sight from the got go

But in the worst cose, we need to tolk about the
UPPER bound, which might indeed be big o of a.
Dogain shere's this may now of talking symbolical
Dogain shere's this way row of talking symbolical by about best coses and worst coses on laws bounds
endupper bounds.
The same of the sa
- notation, just as a little trivia now, is it applicable
boxd on the definition I gove earlier? it because you
only take out the ahoto notation when those 2 bounds,
supper and laws, happen to be the same for short-
about hard notation, it you will.
- Then I will all with paid and I for all all the