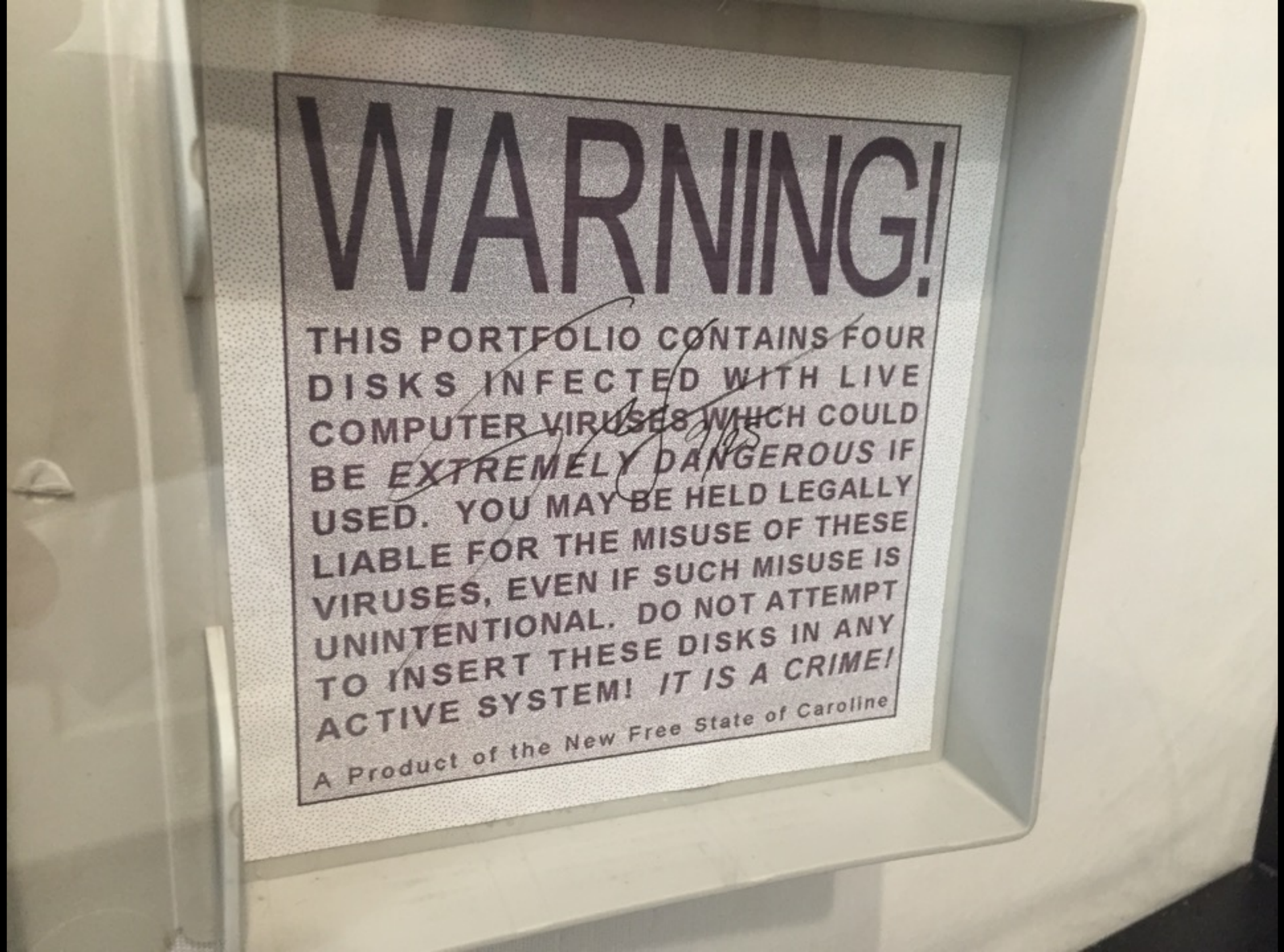
CS50 for MBAs

cs50.harvard.edu/mba


Verbatim
2HD
WARNING!


WARNING!
THIS PORTFOLIO CONTAINS FOUR DISKS INFECTED WITH LIVE COMPUTER VIRUSES WHICH COULD BE EXTREMELY DANGEROUS IF USED. YOU MAY BE HELD LEGALLY LIABLE FOR THE MISUSE OF THESE VIRUSES, EVEN IF SUCH MISUSE IS UNINTENTIONAL. DO NOT ATTEMPT TO INSERT THESE DISKS IN ANY ACTIVE SYSTEM! IT IS A CRIME!
A Product of the New Free State of Caroline


CPU

CS50 for MBAs

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classes

computational thinking
Internet technologies
back-end development
database design
front-end development
cloud computing
mobile development
technology stacks

computational thinking

day 0

ASCII, algorithms, binary, computational thinking, inputs, outputs, pseudocode

day 1

arrays, asymptotic notation, hash tables, lists, searching, sorting, trees, plus Dropbox

day 2

Boolean expressions, conditions, events, functions, loops, Scratch, statements, threads, variables

Internet technologies

day 3

cookies, DNS, HTTP, HTTPS, networking, security, session hijacking, TCP/IP, virtual machines, VPCs, VPNs, web hosts, web servers

day 4

CSS, HTML, mobile, responsive design, web

back-end development

day 5

Python

day 6

frameworks, libraries, MVC

database design

day 7

noSQL, SQL

front-end development

day 8

JavaScript

day 9

Ajax, analytics

cloud computing

day 10

caching, cloud computing, load balancing, privacy, scalability, plus ACT.md

mobile development

day 11

hybrid apps, mobile apps, native apps, plus Quora

day 12

tentatively Android, iOS

technology stacks

day 13

tentatively Node.js, PHP, Ruby

assignments

projects

Scratch
CSS, HTML
Python, SQL
JavaScript
Android, iOS
tentatively

office hours

Ask, Discuss

expectations

attend all classes

complete all assignments

implement six projects

grades

participation (25%)

assignments (35%)

projects (40%)

computation

inputs, algorithms, outputs

inputs, outputs

binary

0, 1

decimal

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

100 10 1

1 2 3

100 × 1 + 10 × 2 + 1 × 3

100 10 1

1 2 3

100 + 20 + 3

4 2 1

0 0 0

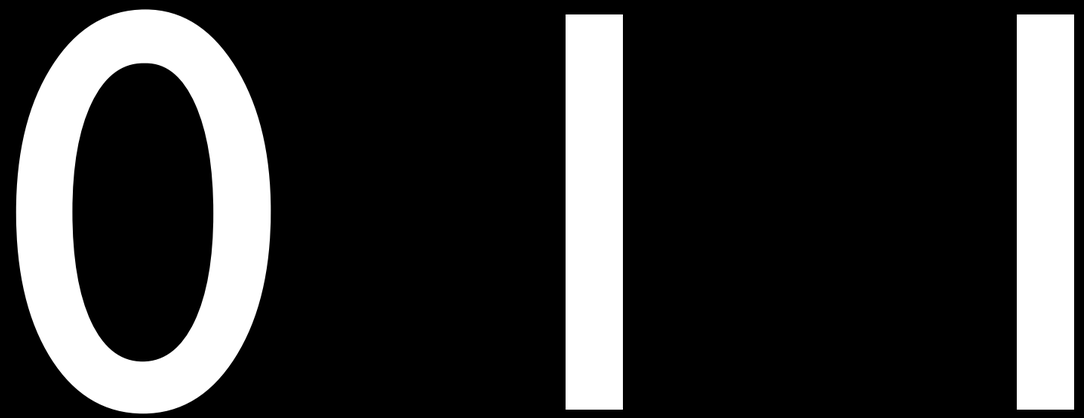
4 2 1

0 0 1

4 2 1

0 1 0

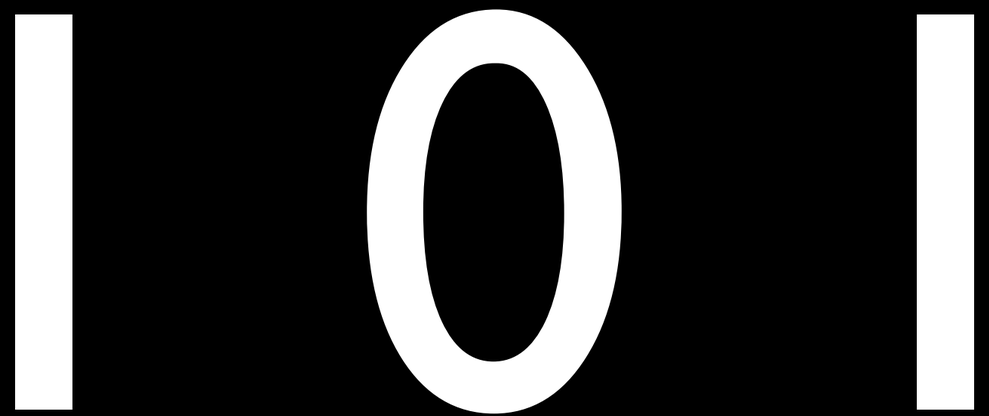
4 2 1

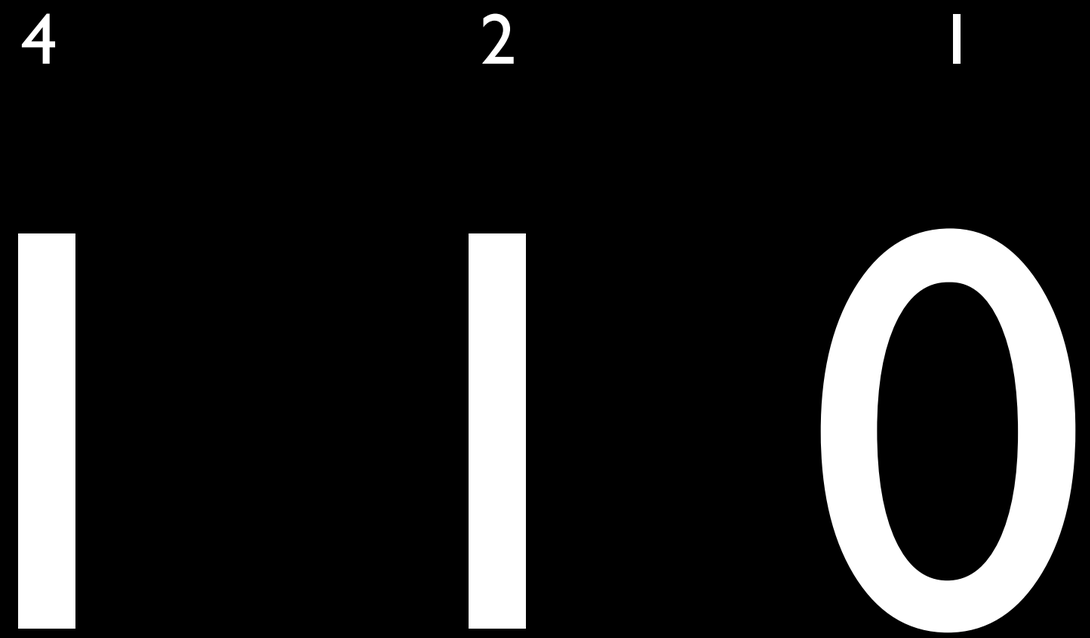


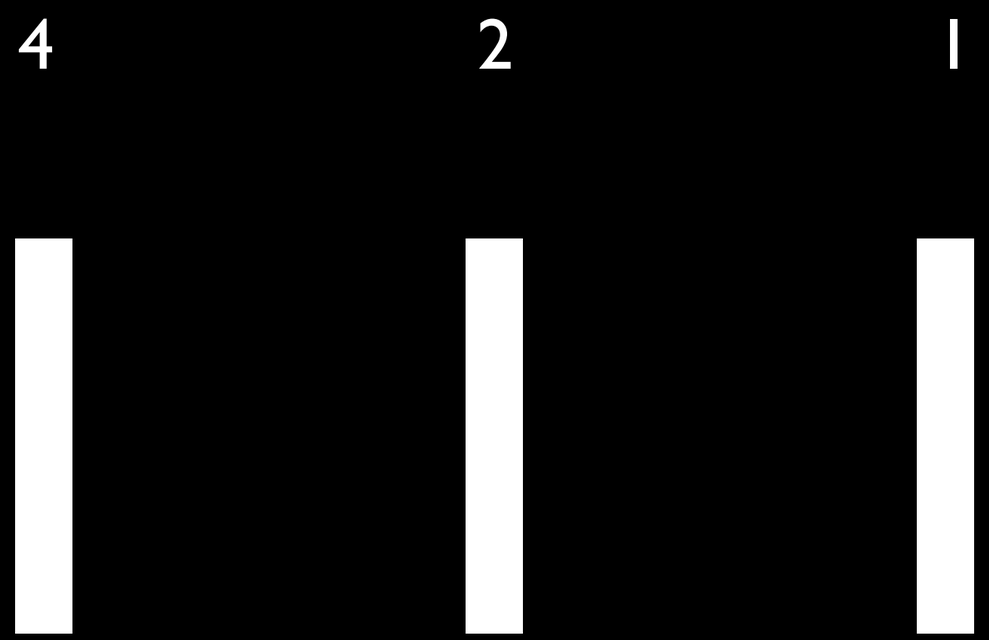
4 2 1

1 0 0

4 2 1

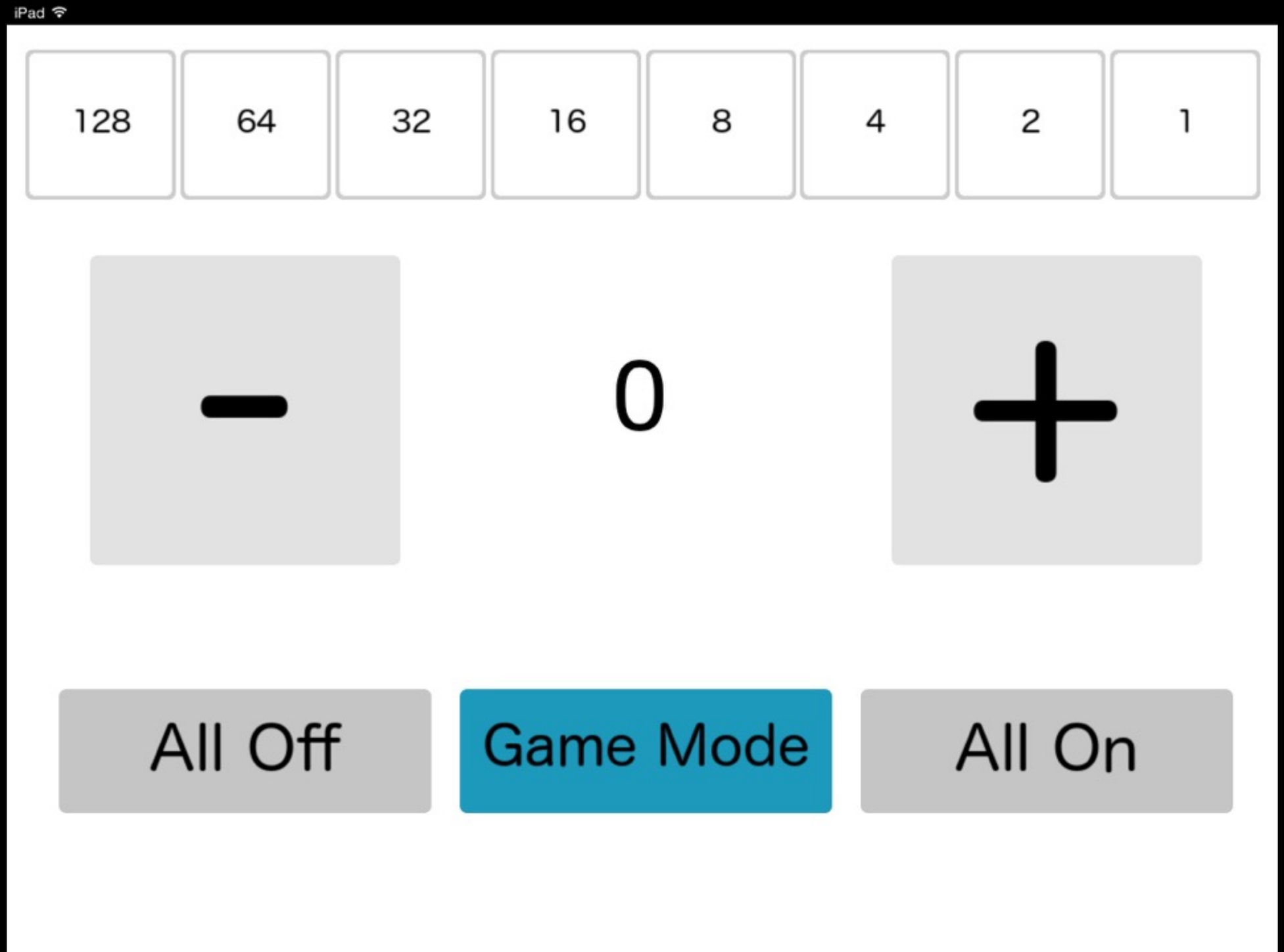



4
2
1
1
1
0


4
2
1

API

application programming interface


iPad
128
64
32
16
8
4
2
1
0
All Off
Game Mode
All On

15

50

ASCII

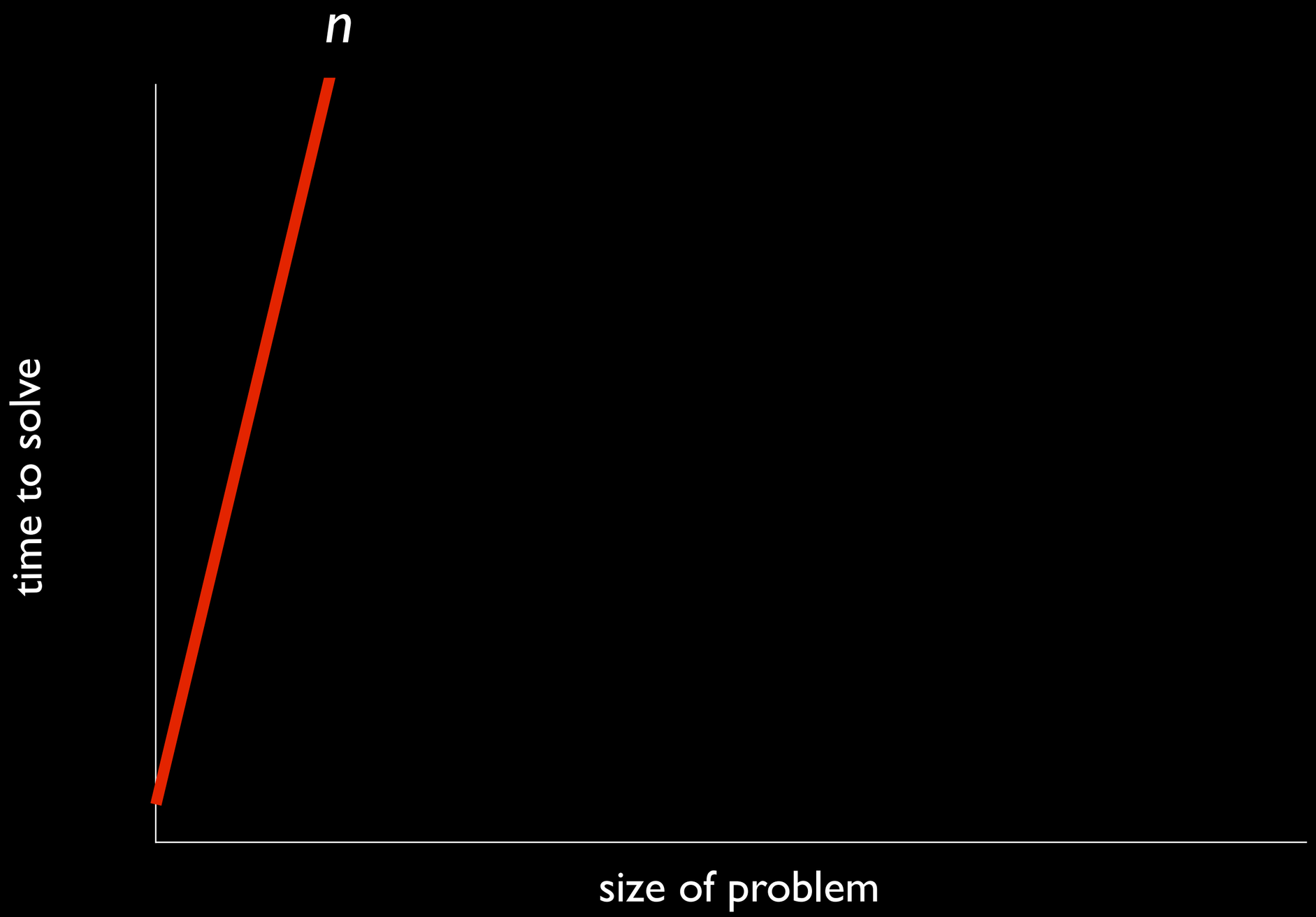
A	B	C	D	E	F	G	H	I	J	K	L	M
65	66	67	68	69	70	71	72	73	74	75	76	77

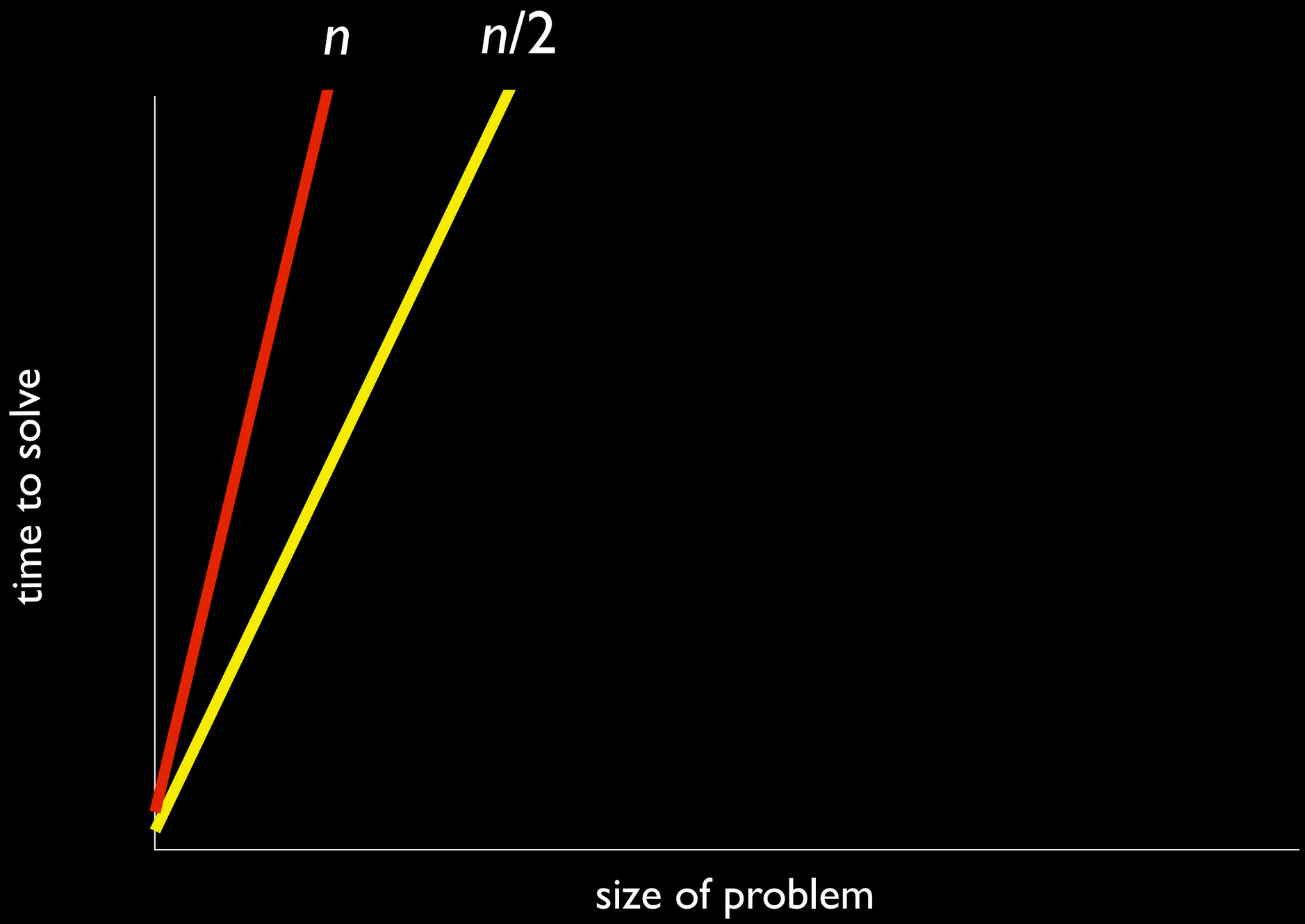
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
78	79	80	81	82	83	84	85	86	87	88	89	90

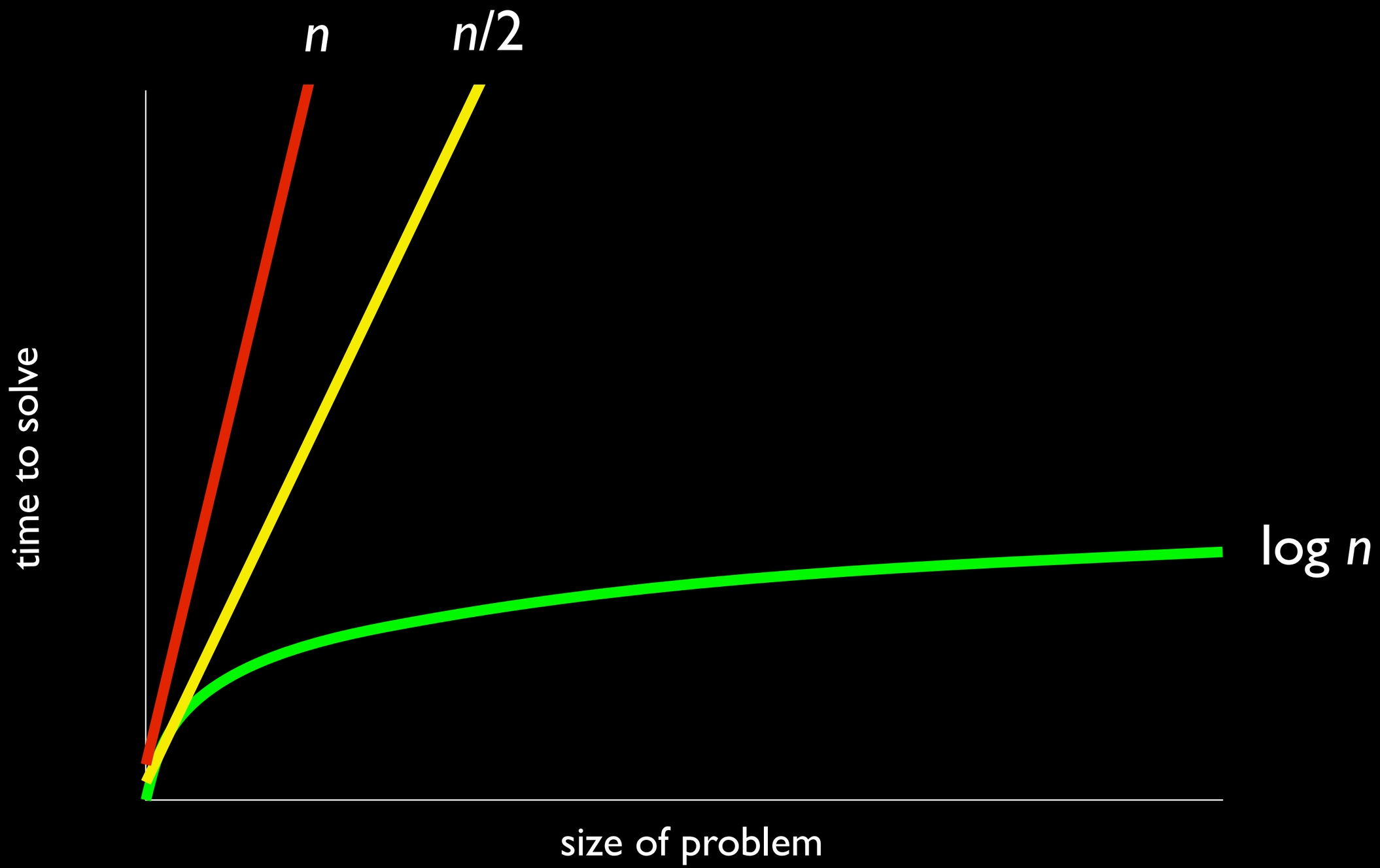
H I

72 73


ALGORITHM


n
time to solve
size of problem


n
n/2
time to solve
size of problem


n
n/2
time to solve
log n
size of problem

pseudocode

```
 1  pick up phone book
 2  open to middle of phone book
 3  look at names
 4  if "Smith" is among names
 5      call Mike
 6  else if "Smith" is earlier in book
 7      open to middle of left half of book
 8      go to line 3
 9  else if "Smith" is later in book
10      open to middle of right half of book
11      go to line 3
12  else
13      give up
```

1 stand up and assign yourself the number 1

2 pair off with someone standing,
add your numbers together,
and adopt the sum as your new number

3 one of you should sit down;
the other should go back to step 2

assignment 0

due by 7:00am tomorrow

to be continued