introduction to CS50 until 2pm

5-minute break *

introduction to pset0 until 2:30pm

* if shopping 2pm class, aok to leave early; watch rest at cs50.harvard.edu

experimental screencast at screencast.cs50.net

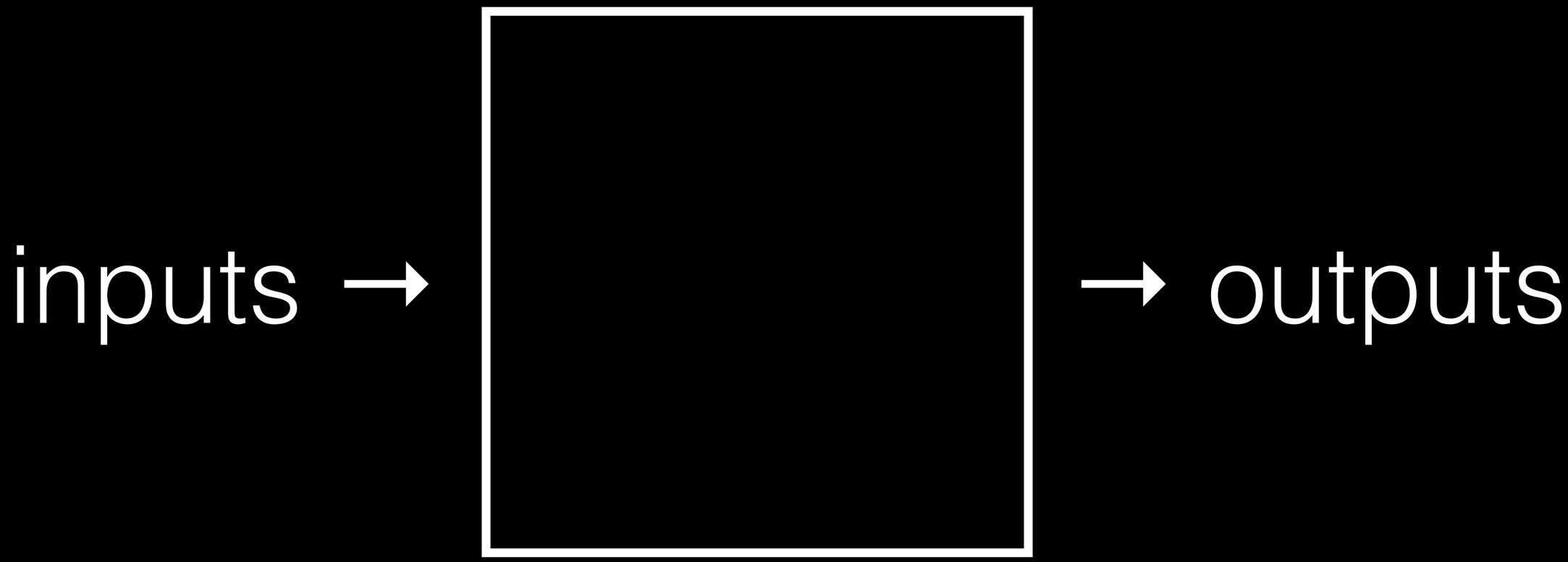
Week 0

73%

of CS50 students
have never taken CS before

what ultimately matters in this course is not so much where you end up relative to your classmates but where you, in **Week 11**, end up relative to yourself in **Week 0**

problem solving


inputs
outputs

binary

0, 1

decimal

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

1 2 3


100
10
1
1 2 3

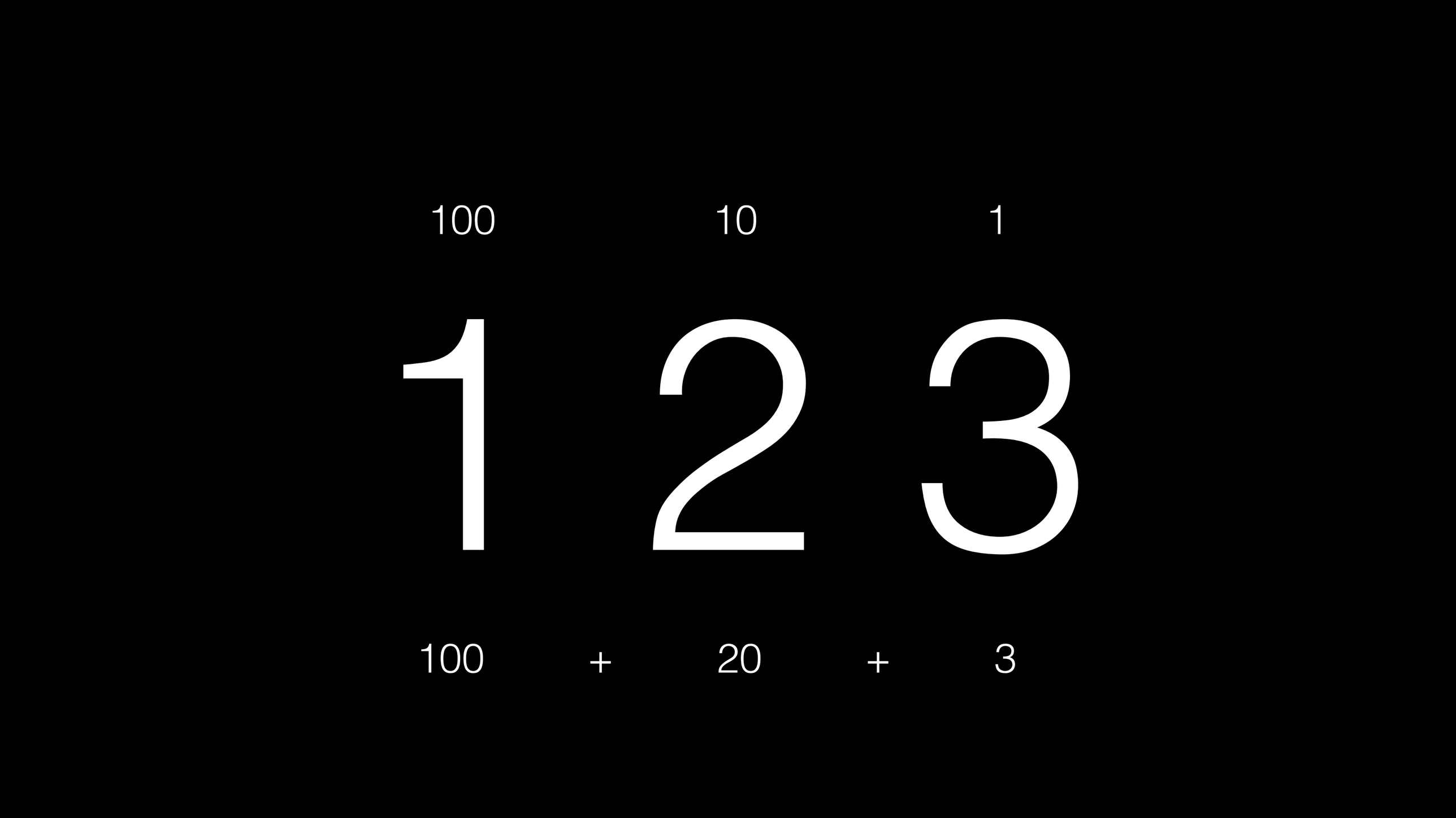
100×1

100 10 1

$100 \times 1 + 10 \times 2$

100	10	1
1	2	3

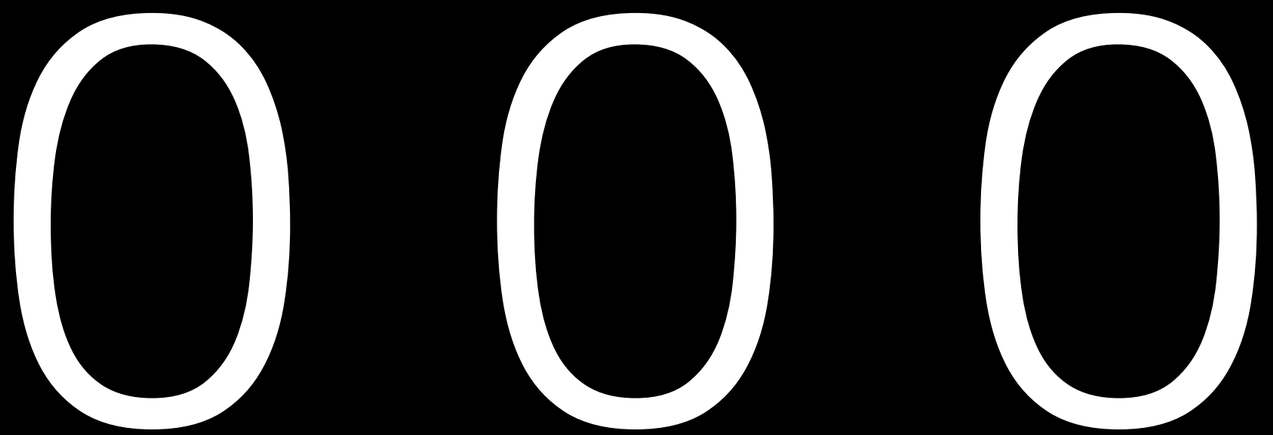
$100 \times 1 + 10 \times 2 + 1 \times 3$


100
10
1
1 2 3
100 + 20 + 3

1 2 3

O O O

4 2 1



4 2 1

0 0 1

4 2 1

0 1 0

4 2 1

0 1 1

4 2 1

1 0 0

4 2 1

1 0 1

4 2 1

1 1 0

4 2 1

42

50

ASCII

A	B	C	D	E	F	G	H	I	...
65	66	67	68	69	70	71	72	73	...

72 73 33

H

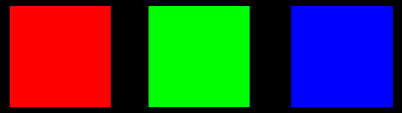
72 73 33

H I

72 73 33

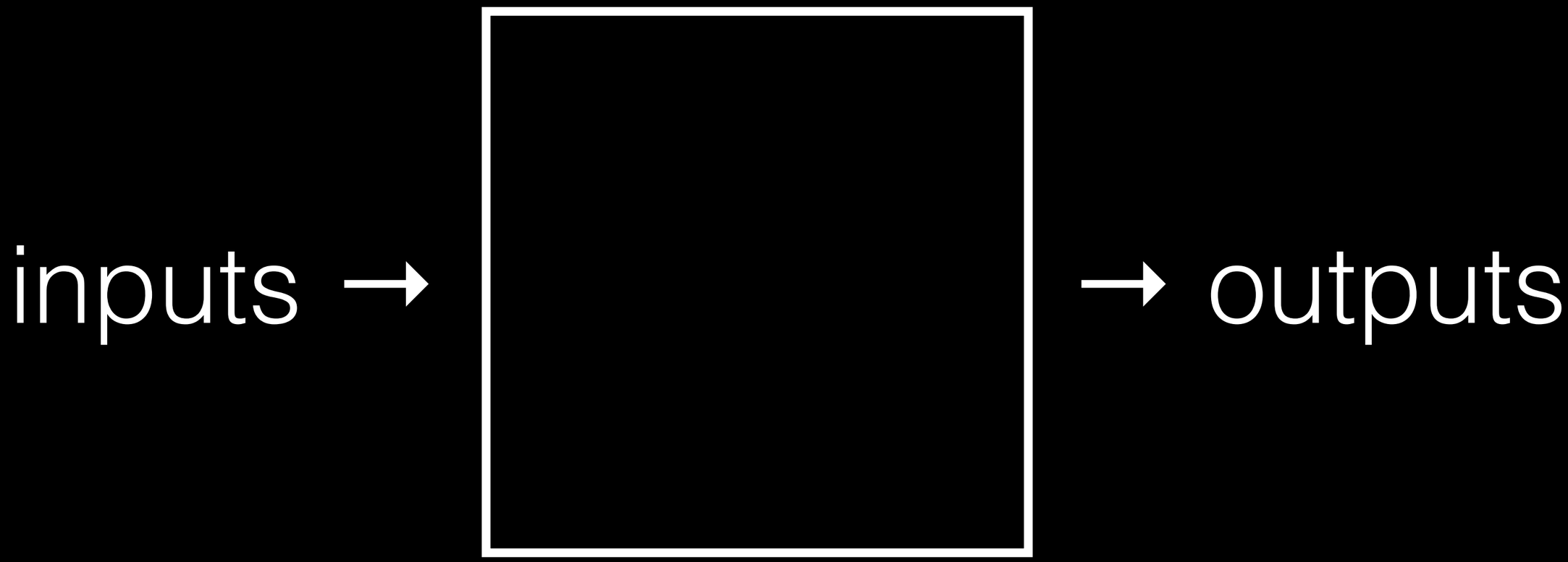
H I !

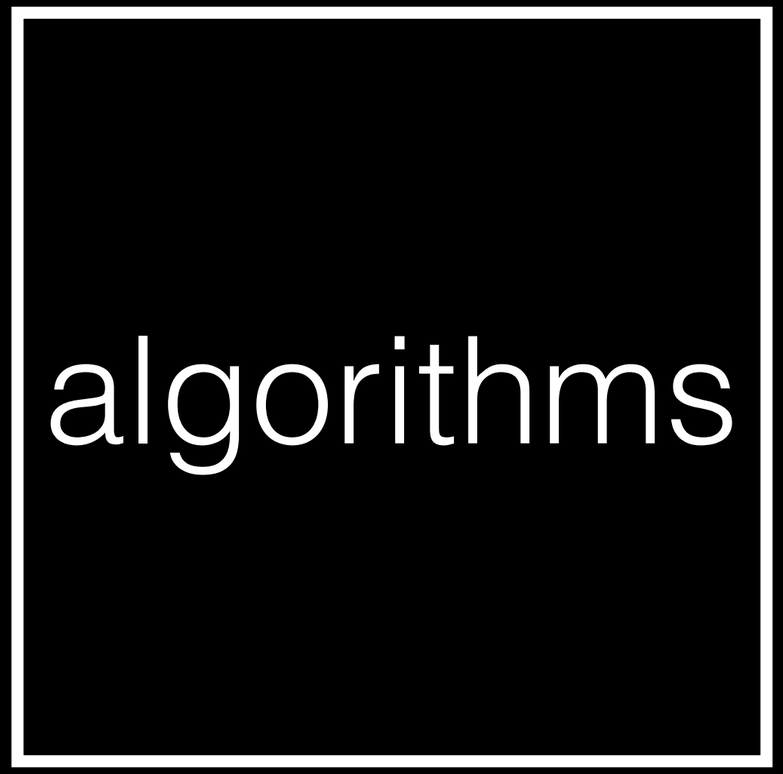
72 73 33



72 73 33

abstraction


inputs
outputs


algorithms

0 Stand up and think of the number 1.

1 Pair off with someone standing.
Add your numbers together.

2 One of you should then sit down.
If you're still standing, go back to step 1.

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

```
 0  pick up phone book
 1  open to middle of phone book
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 3  if Smith is among names
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 9      open to middle of right half of book
10      go back to step 2
11  else
12      quit
```
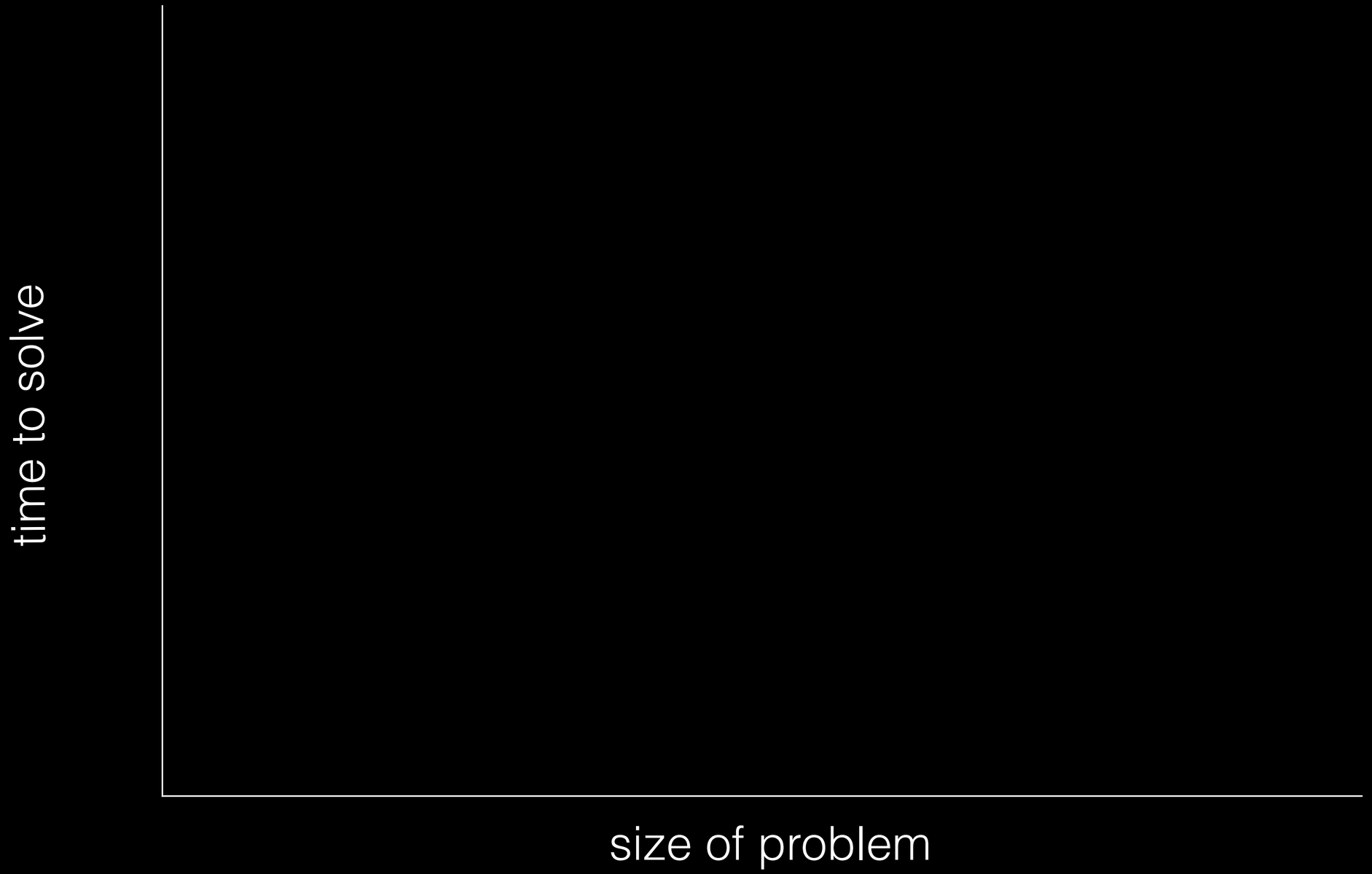
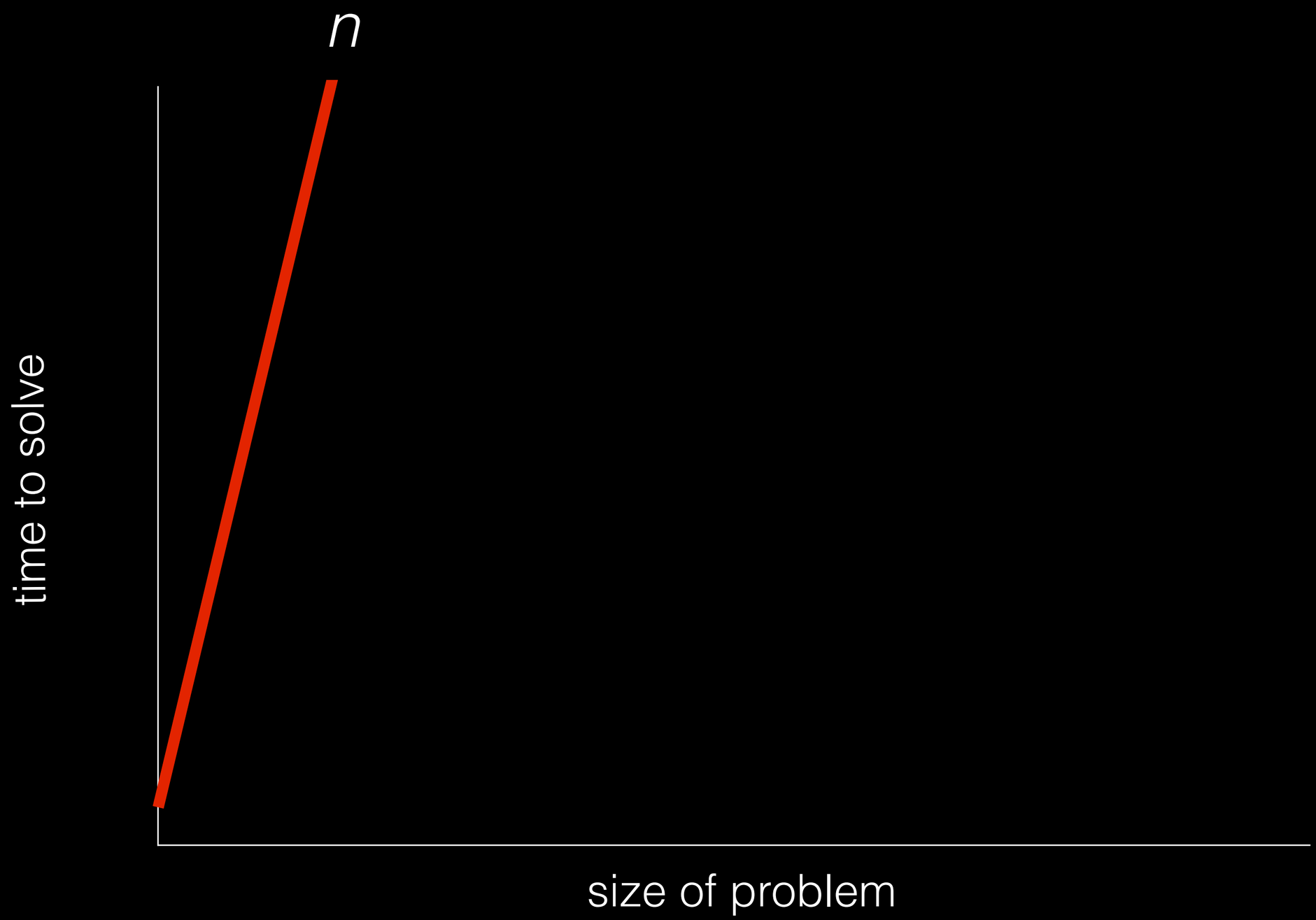
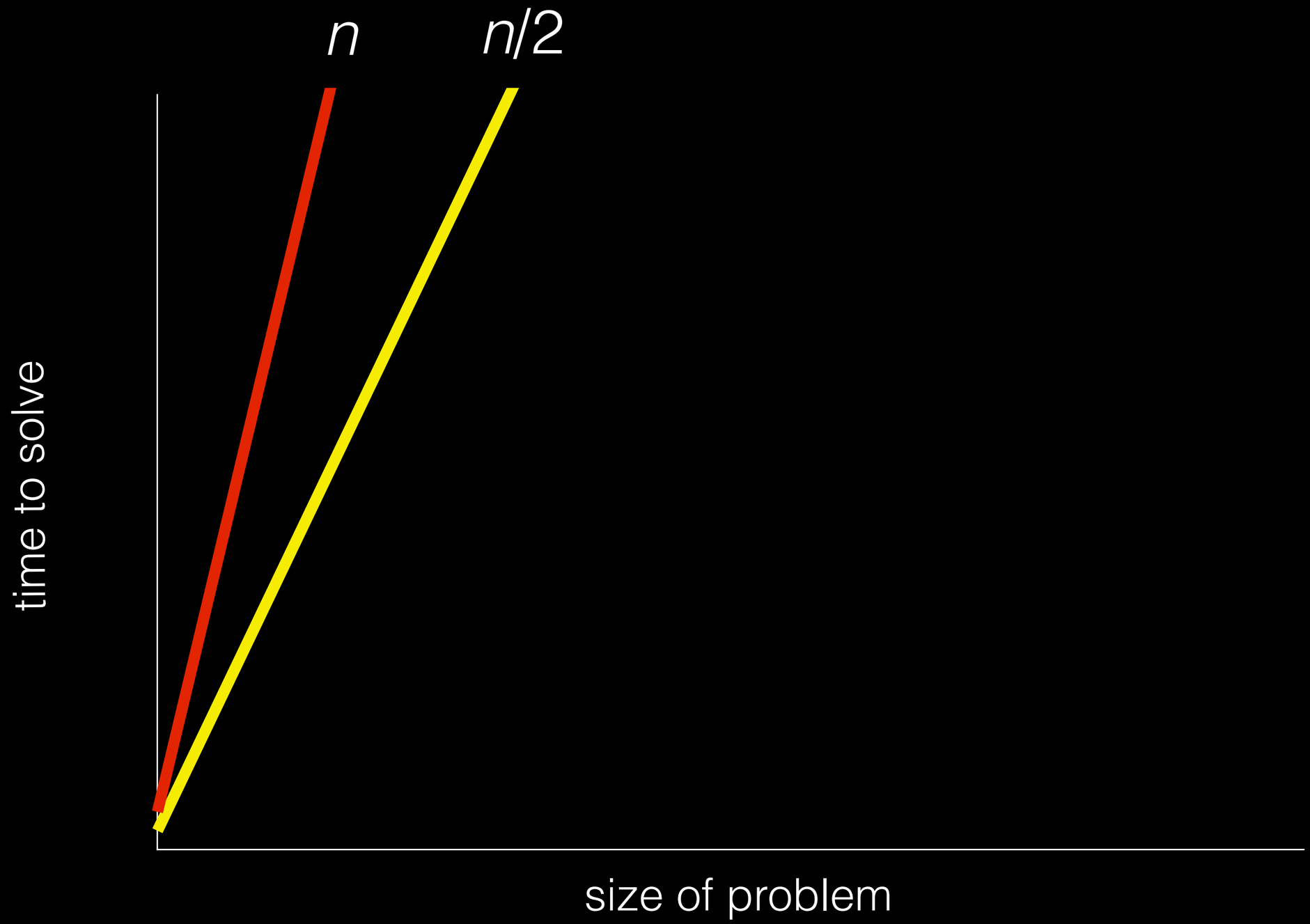
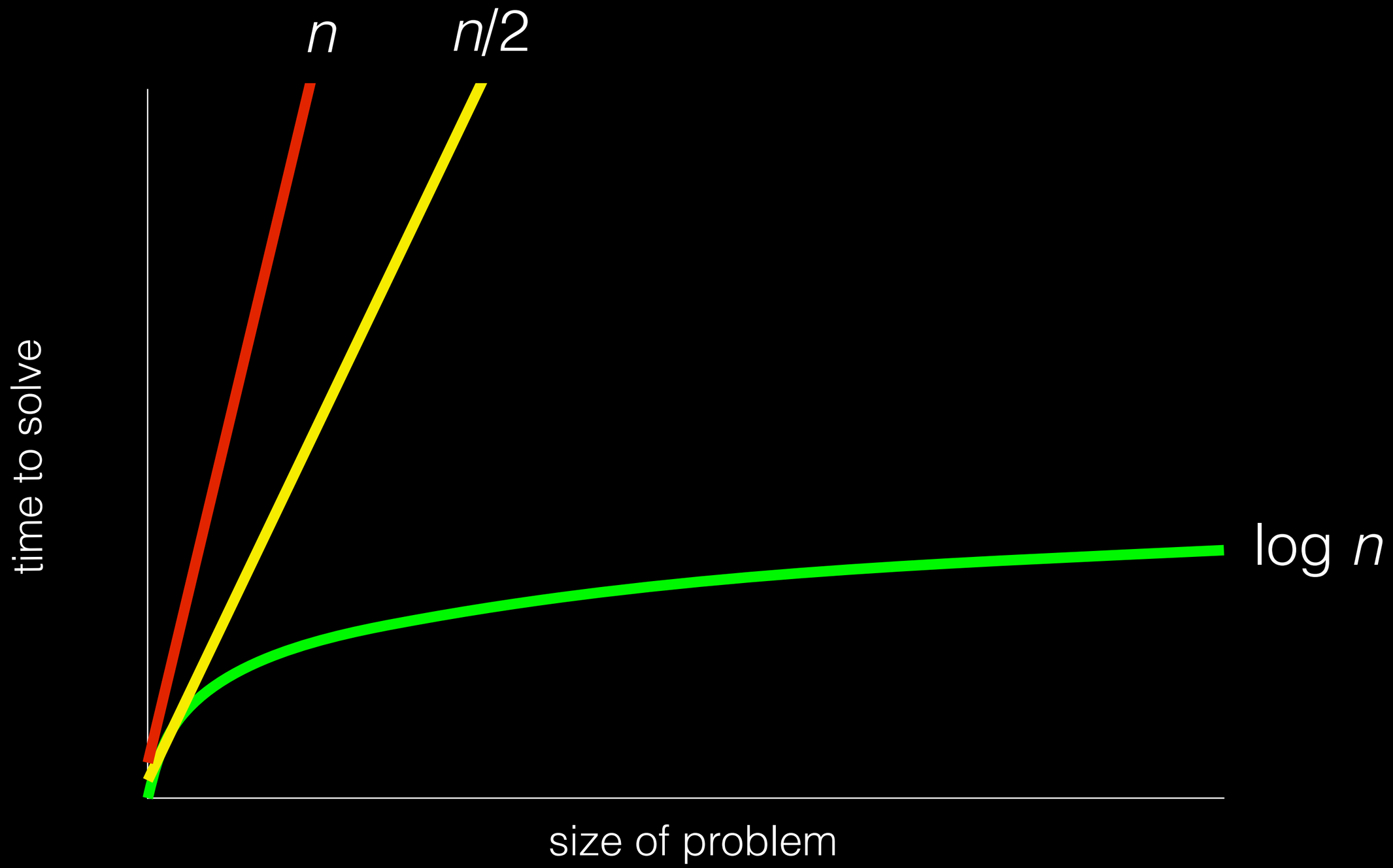


time to solve
size of problem


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

This is CS50

cs50.ly/new

lectures

attend first

…

attend last

Lecture		Filmed	Released
Week 0	Scratch	Wed 8/31, 1pm – 2:30pm	Wed 8/31, 1pm
Week 1	C	Fri 8/26, 11am – 2pm	Fri 9/2, noon
Week 2	Arrays	Tue 9/6, 12:30pm – 2:30pm	Fri 9/9, noon
Week 3	Algorithms	Mon 9/12, 12:30pm – 3:30pm	Fri 9/16, noon
Week 4	Memory	Tue 9/13, 12:30pm – 3:30pm	Fri 9/23, noon
Week 5	Data Structures	Mon 9/26, 12pm – 3pm	Fri 9/30, noon
Week 6	…	Mon 10/3, 11:30am – 2:30pm	Fri 10/7, noon
	Machine Learning	Thu 10/13, 4pm – 5:15pm	Thu 10/13, 4pm
Week 7	Python	Wed 10/5, 12pm – 3pm	Fri 10/14, noon
Week 8	HTTP	Tue 10/18, 12:30pm – 3:30pm	Fri 10/21, noon
Week 9	SQL	Mon 10/24, 12pm – 3pm	Fri 10/28, noon
Week 10	JavaScript	Mon 10/31, 11:30am – 2:30pm	Fri 11/4, noon
Week 11	The End	Mon 11/21, 1pm – 2:30pm	Mon 11/21, 1pm

walkthroughs

most Wednesdays at 1pm

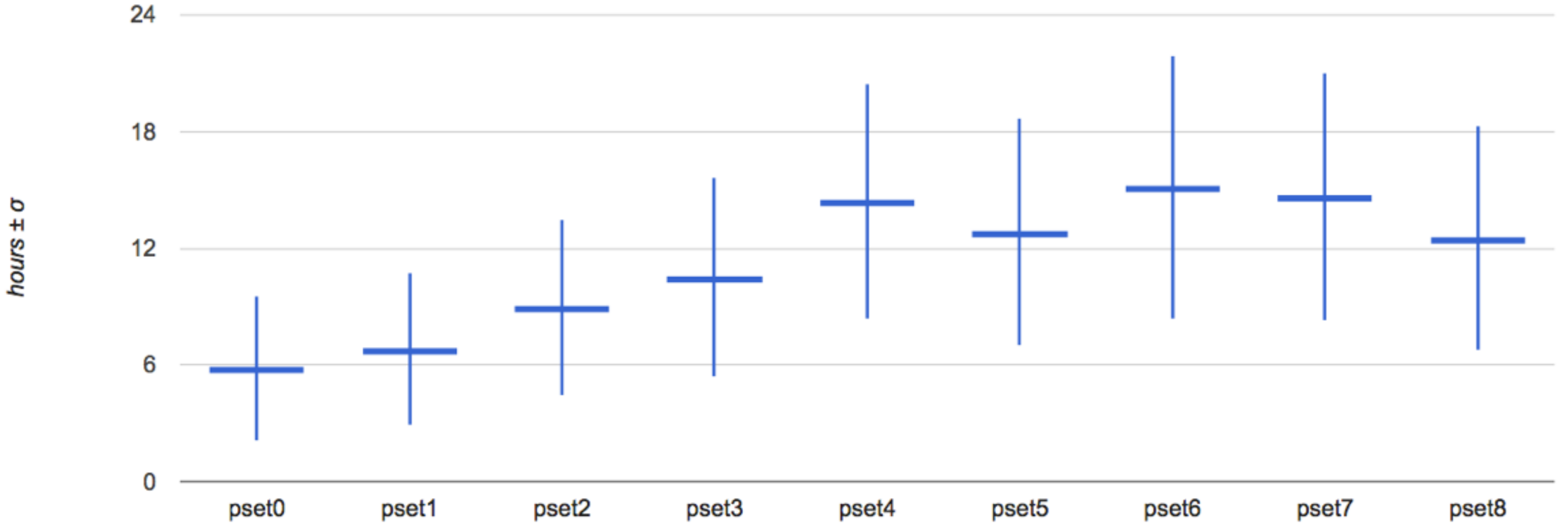
embedded in every problem set

problem sets

released on Fridays

due (10 days later) on Mondays at noon

Problem Set	Language	Released	Due
Problem Set 0	Scratch	Wed 8/31	Mon 9/5, noon
Problem Set 1	C	Fri 9/2	Mon 9/12, noon
Problem Set 2	C	Fri 9/9	Mon 9/19, noon
Problem Set 3	C	Fri 9/16	Mon 9/26, noon
Problem Set 4	C	Fri 9/23	Mon 10/3, noon
Problem Set 5	C	Fri 9/30	Mon 10/10, noon
Problem Set 6	Python	Fri 10/21	Mon 10/31, noon
Problem Set 7	Python, SQL	Fri 10/28	Mon 11/7, noon
Problem Set 8	JavaScript	Fri 11/4	Mon 11/14, noon


24
18
12
6
0
hours ± σ
pset0
pset1
pset2
pset3
pset4
pset5
pset6
pset7
pset8

take as first year?

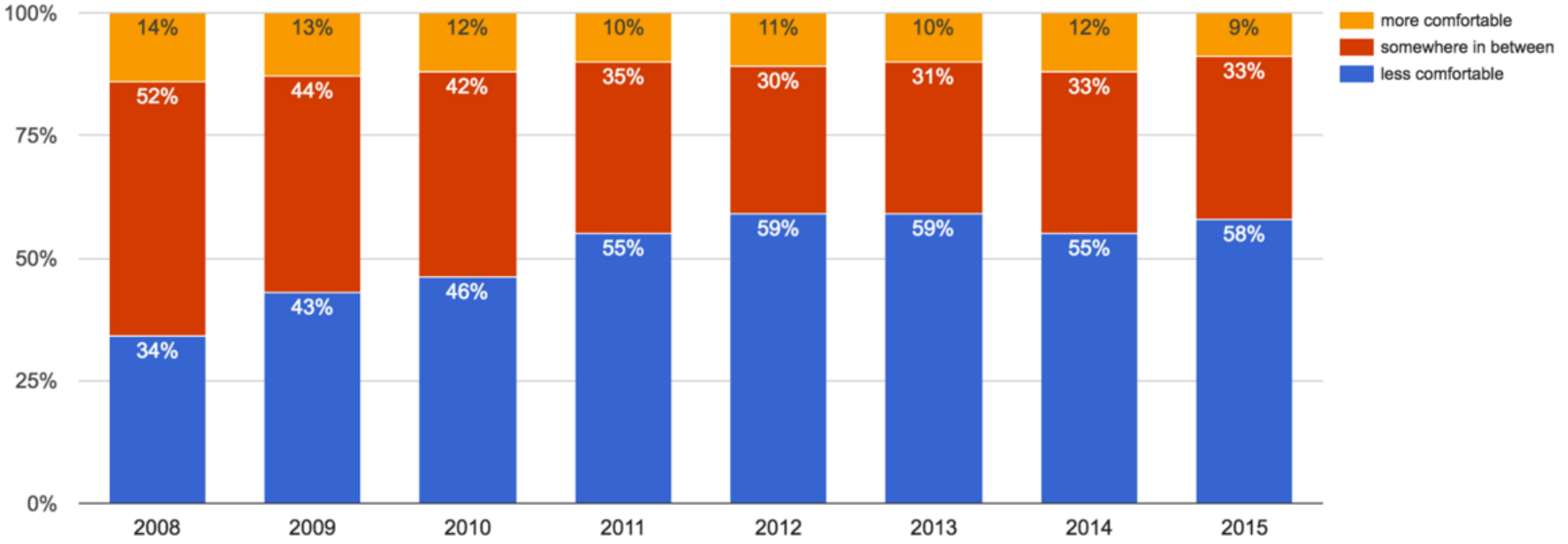
take with other courses?

sections

less comfortable

more comfortable

somewhere in between


100%
75%
50%
25%
0%
2008
2009
2010
2011
2012
2013
2014
2015
14%
52%
34%
13%
44%
43%
12%
42%
46%
10%
35%
55%
11%
30%
59%
10%
31%
59%
12%
33%
55%
9%
33%
58%
more comfortable
somewhere in between
less comfortable

Section	Dates
C	Wed 9/7*
Arrays	Mon 9/12, Tue 9/13, Wed 9/14
Algorithms	Mon 9/19, Tue 9/20, Wed 9/21
File I/O	Mon 9/26, Tue 9/27, Wed 9/28
Data Structures	Mon 10/3, Tue 10/4, Wed 10/5
Review for Test	Mon 10/10, Tue 10/11, Wed 10/12
TF's Choice	Mon 10/17, Tue 10/18, Wed 10/19
Python	Mon 10/24, Tue 10/25, Wed 10/26
SQL	Mon 10/31, Tue 11/1, Wed 11/2
JavaScript	Mon 11/7, Tue 11/8, Wed 11/9
Review for Quiz	Mon 11/14*

* Course-wide and filmed.

sections

Mondays

Tuesdays

Wednesdays

office hours

Wednesdays

Thursdays

Sundays

office hours

Mondays

Tuesdays

Wednesdays

Thursdays

Fridays

Saturdays

Sundays


BURKE-McCOY HALL
NAMED IN HONOR OF
DUSTIN M. BURKE '52, MBA '55
HESTER BELL McCOY
ROBERT W. McCOY '62, MBA '65
DEDICATED FEBRUARY 5, 1997
HSA
HARVARD
STUDENT
AGENCIES
67

tutoring


RIVALS
WEEKEND
CS50
quora
HARVARD
2019

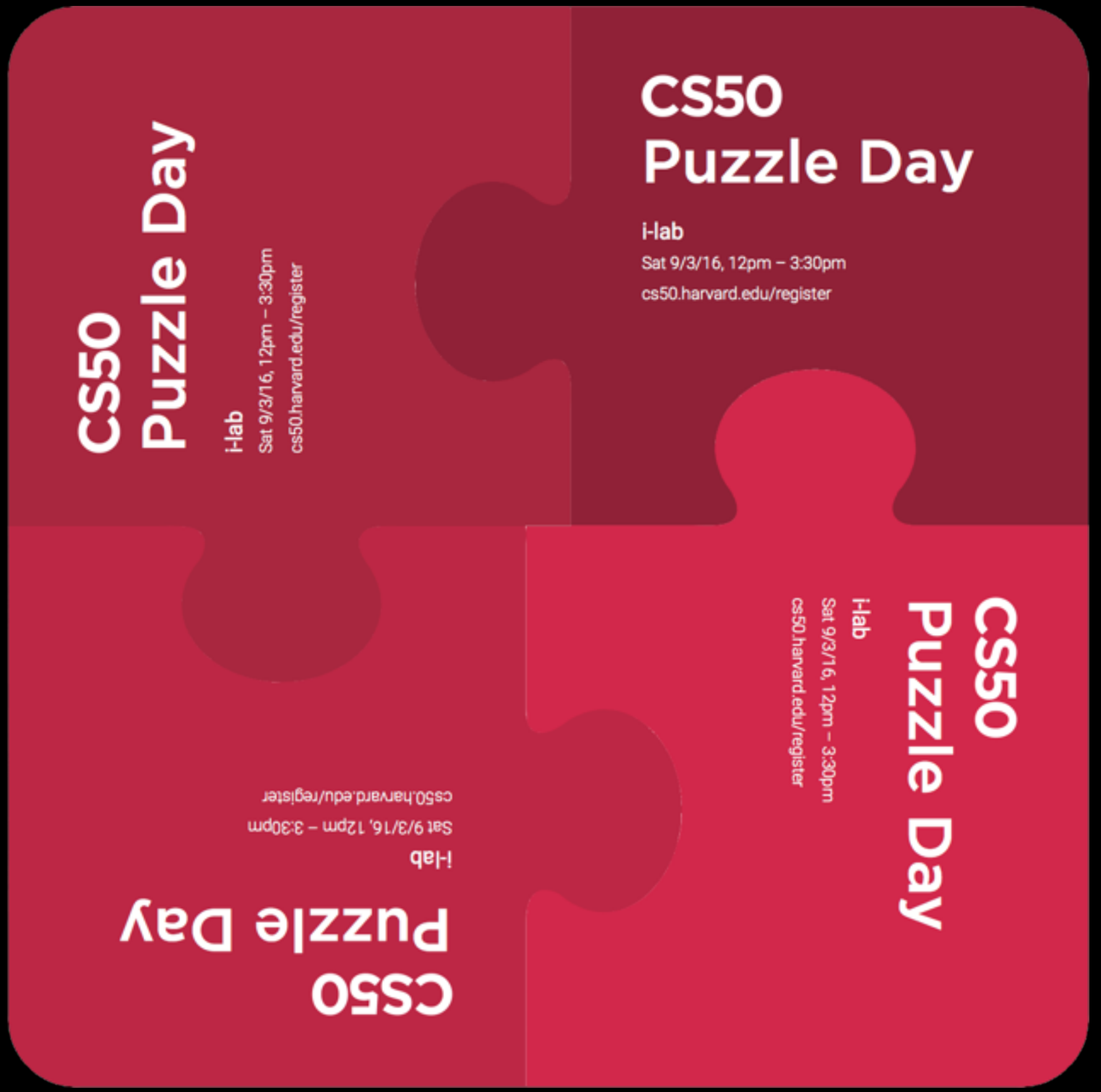

Feedback 101
CFU 101
Teaching Presentations
Letter to Self


I took CS50.
CS50
Walter Martin


I taught CISO.


1843.
ARTHUR BUCKMINSTER FULLER.
11 DECEMBER, 1862. FREDERICKSBURG.
MONTGOMERY RITCHIE.
7 NOVEMBER, 1864.
1847.
EDWARD HUTCHINSON ROBBINS
17 SEPTEMBER, 1862. ANTIETAM
CS50
I took CS50.


noob
travis
CS50
HARVARD
LOL


CS50
Puzzle Day
i-lab
Sat 9/3/16, 12pm – 3:30pm
cs50.harvard.edu/register
CS50
Puzzle Day
i-lab
Sat 9/3/16, 12pm – 3:30pm
cs50.harvard.edu/register
CS50
Puzzle Day
i-lab
Sat 9/3/16, 12pm – 3:30pm
cs50.harvard.edu/register
CS50
Puzzle Day
i-lab
Sat 9/3/16, 12pm – 3:30pm
cs50.harvard.edu/register


FIRE+ICE
an improvisational grill
in harvard square
an improvisational grill
FIRE+
ICE
in harvard square

CS50 Coding Contest

introduction to CS50 until 2pm

5-minute break *

introduction to pset0 until 2:30pm

* if shopping 2pm class, aok to leave early; watch rest at cs50.harvard.edu

introduction to CS50 until 2pm

5-minute break *

introduction to pset0 until 2:30pm

* if shopping 2pm class, aok to leave early; watch rest at cs50.harvard.edu

```c
#include <stdio.h>

int main(void)
{
    printf("hello, world\n");
}
```


when clicked
say hello, world

functions

loops

variables

Boolean expressions

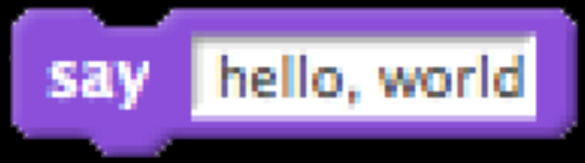
conditions

arrays

threads

events

…


say
hello, world

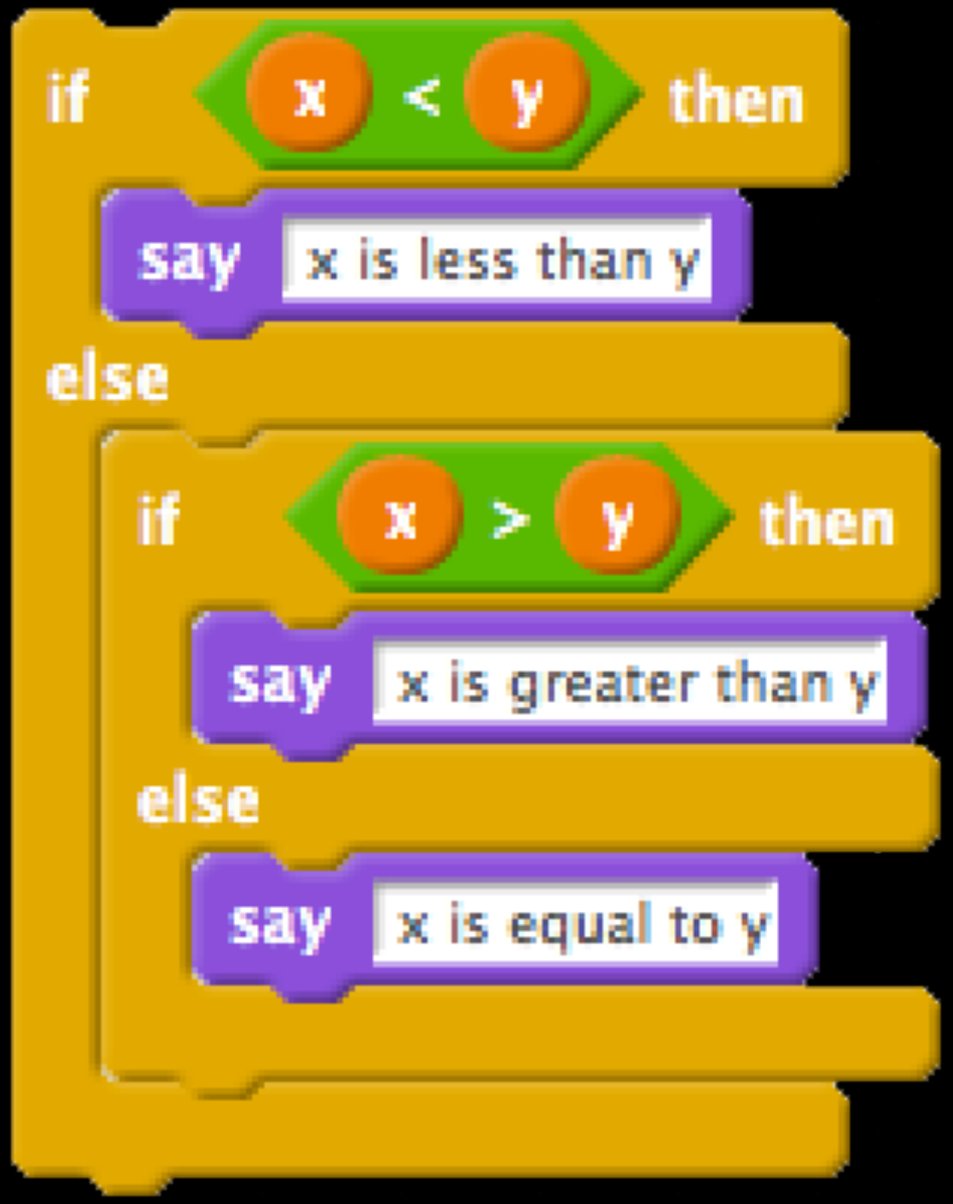

forever
say
hello, world


repeat 50
say hello, world


set i to 0


i
< 50

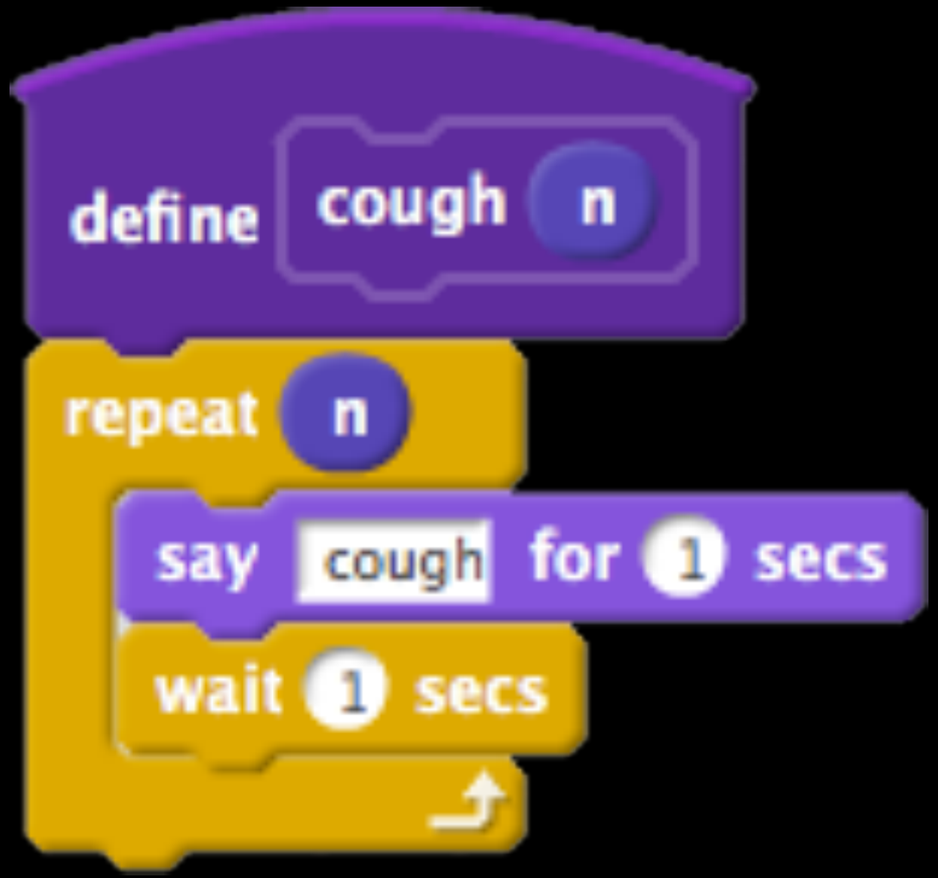

x
<
y


if x < y then
say x is less than y
else
if x > y then
say x is greater than y
else
say x is equal to y


item 1 of argv


when clicked
when clicked


broadcast message
when I receive message


define cough n
repeat n
say cough for 1 secs
wait 1 secs


1844.
EBENEZER PIERCE HINDS.
17 AUGUST, 1862.
1847.
EDWARD HUTCHINSON ROBB
17 SEPTEMBER, 1862.
CS50
CS50.