

CS50 for MBAs

- Ask to sit wherever you'd like. Just remember name cards!
- Auditors welcome (if seats permit)!
- Website at **cs50.github.io/hbs/**

CS50 for MBAs

David J. Malan
malan@harvard.edu

Classes

- Computational Thinking
- Programming Languages
- Algorithms, Data Structures
- Internet Technologies
- Web Design
- Cloud Computing
- Privacy, Security
- Database Design
- Web Programming
- Mobile Strategies
- Technology Stacks

Seminars

- Data Science
- Data Visualization
- Full-Stack Development with Node.js
- iOS Programming with Swift
- Recruiting Software Engineers
- Scratch
- Social Network Analysis in R
- SQL

Staff

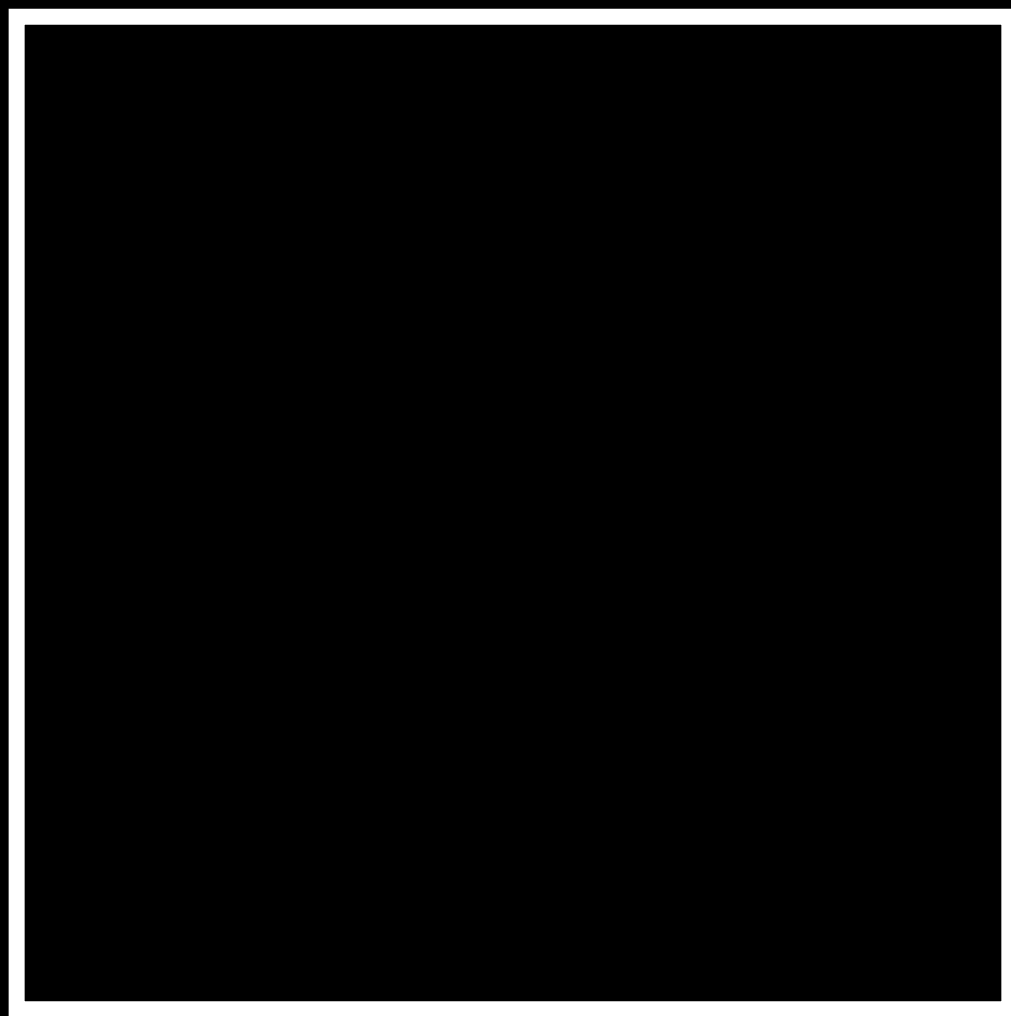
- Alexander Munoz
- Cheng Gong
- Christian Saravia
- Christina Pawlikowski
- Christine Zhang
- Colton Ogden
- Daniel Seong
- **Maria Zlatkova**
- Will Claybaugh



Computational Thinking

- ASCII, binary
- abstraction, algorithms, pseudocode
- imprecision, overflow

inputs →



→ outputs

binary

0, 1

decimal

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

ASCII

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

H

72

73

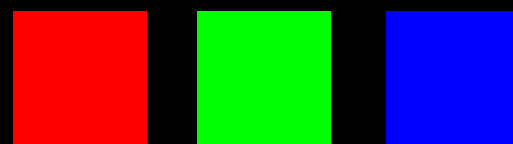
33

H I

72 73 33

H I !

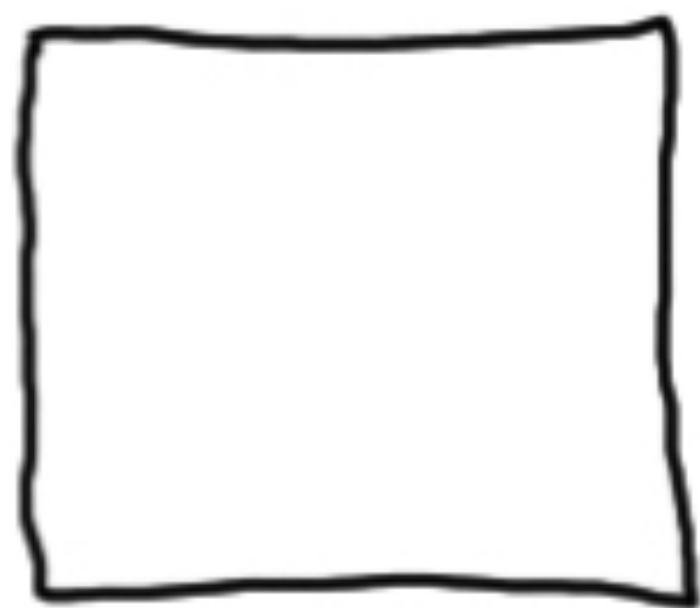
72 73 33

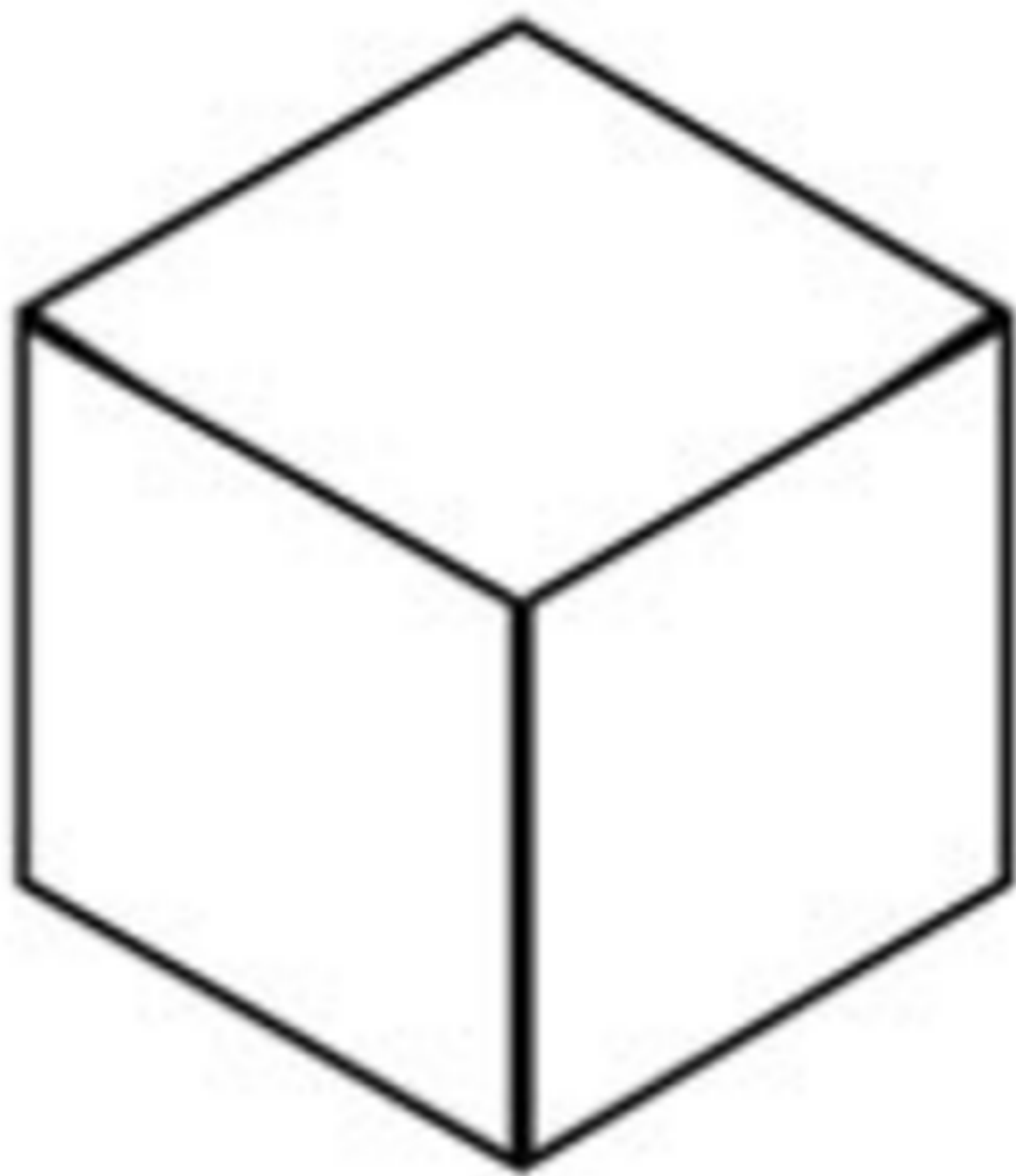


72 73 33

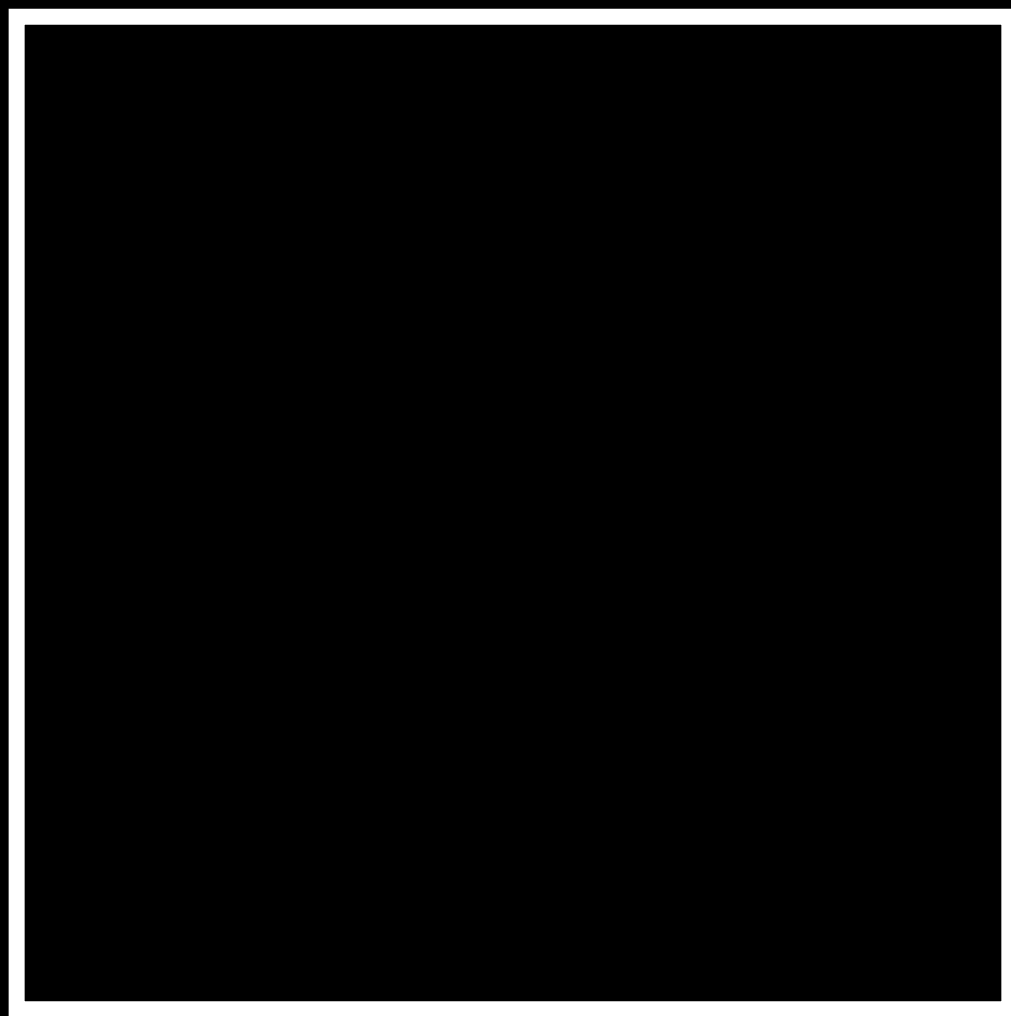


abstraction





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
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
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
```

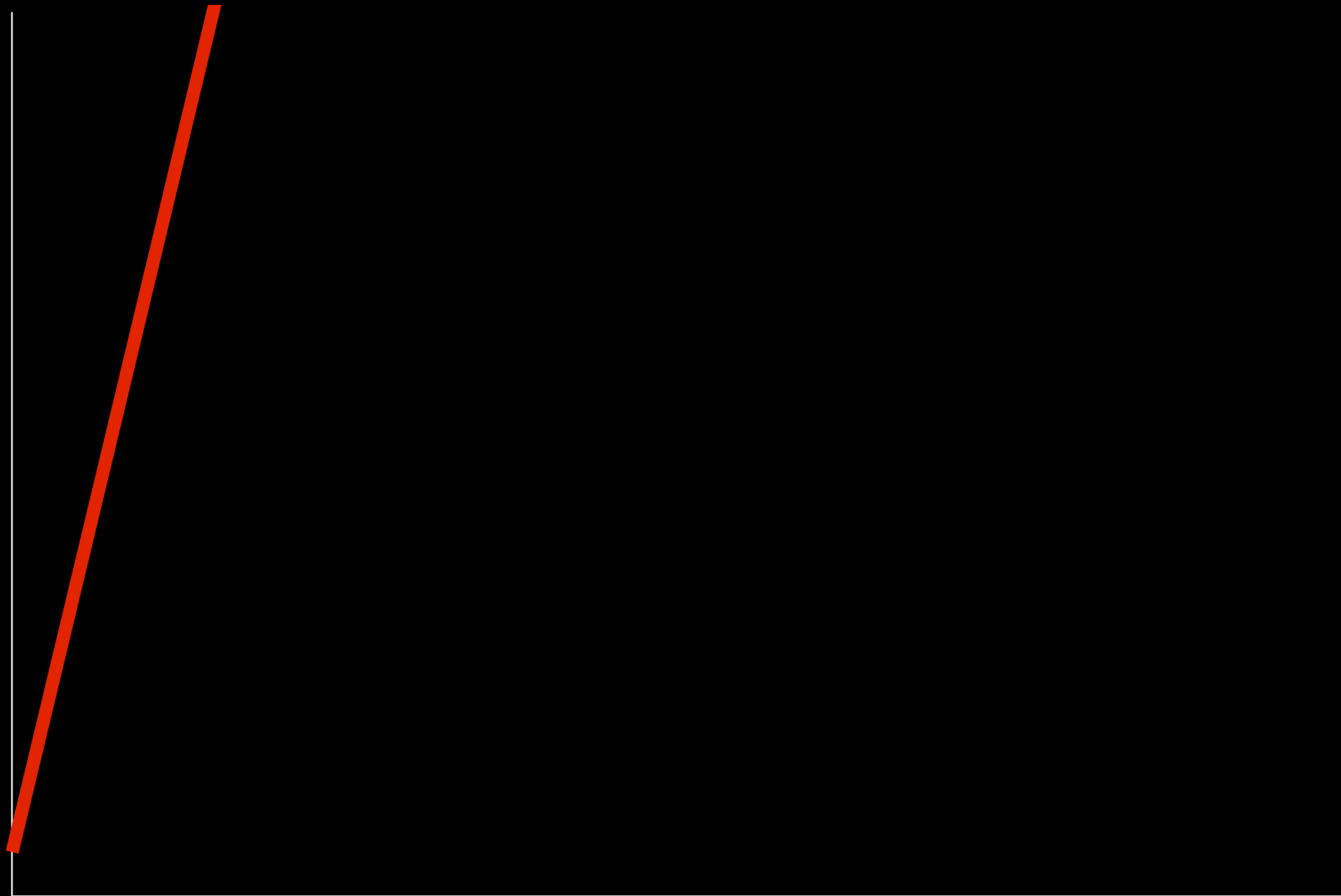
```
0  pick up phone book
1  open to middle of phone book
2  look at names
3  if Smith is among names
4      call Mike
5  else if Smith is earlier in book
6      open to middle of left half of book
7      go back to step 2
8  else if Smith is later in book
9      open to middle of right half of book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

```
0  pick up phone book
1  open to middle of phone book
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
```

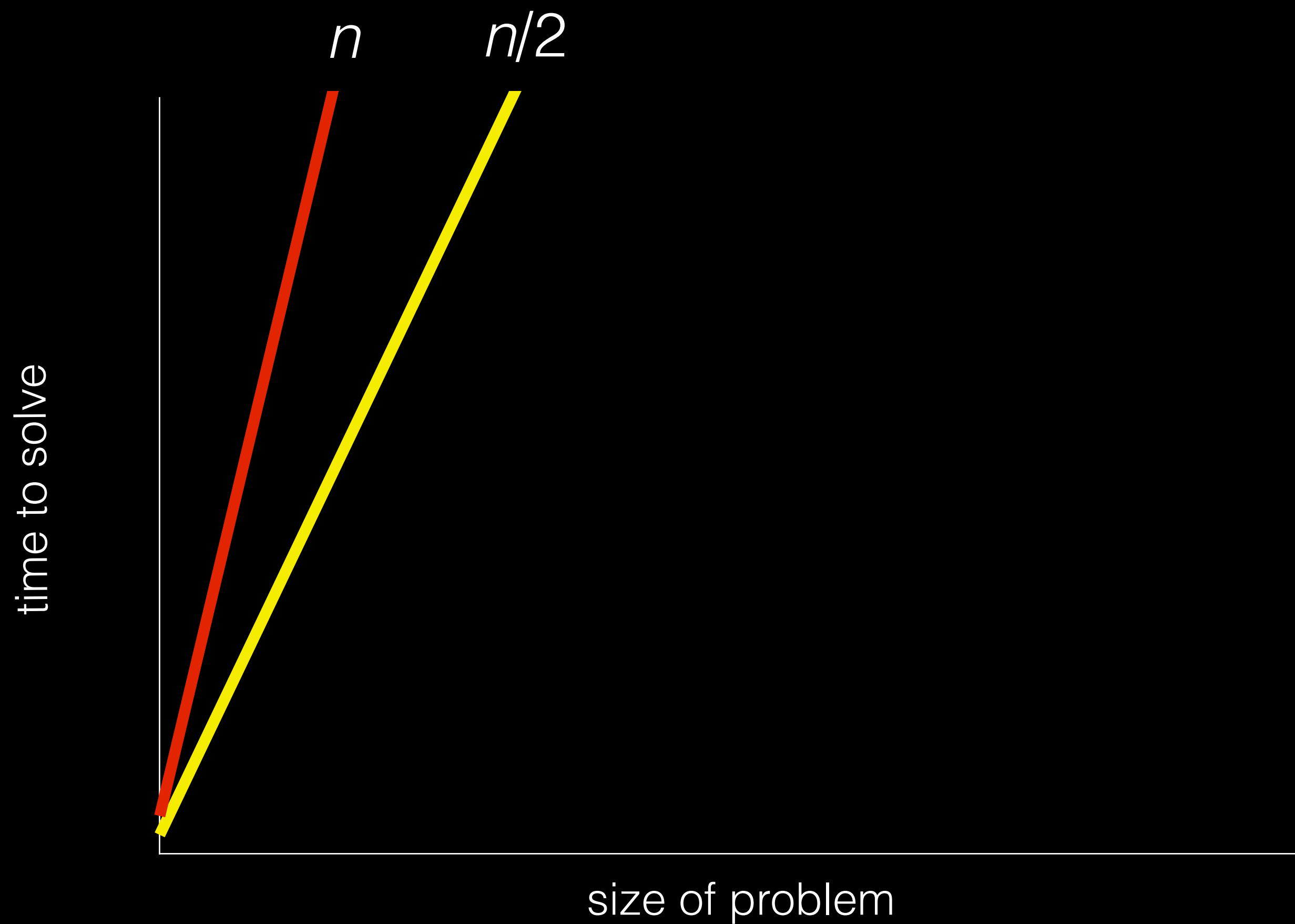
time to solve

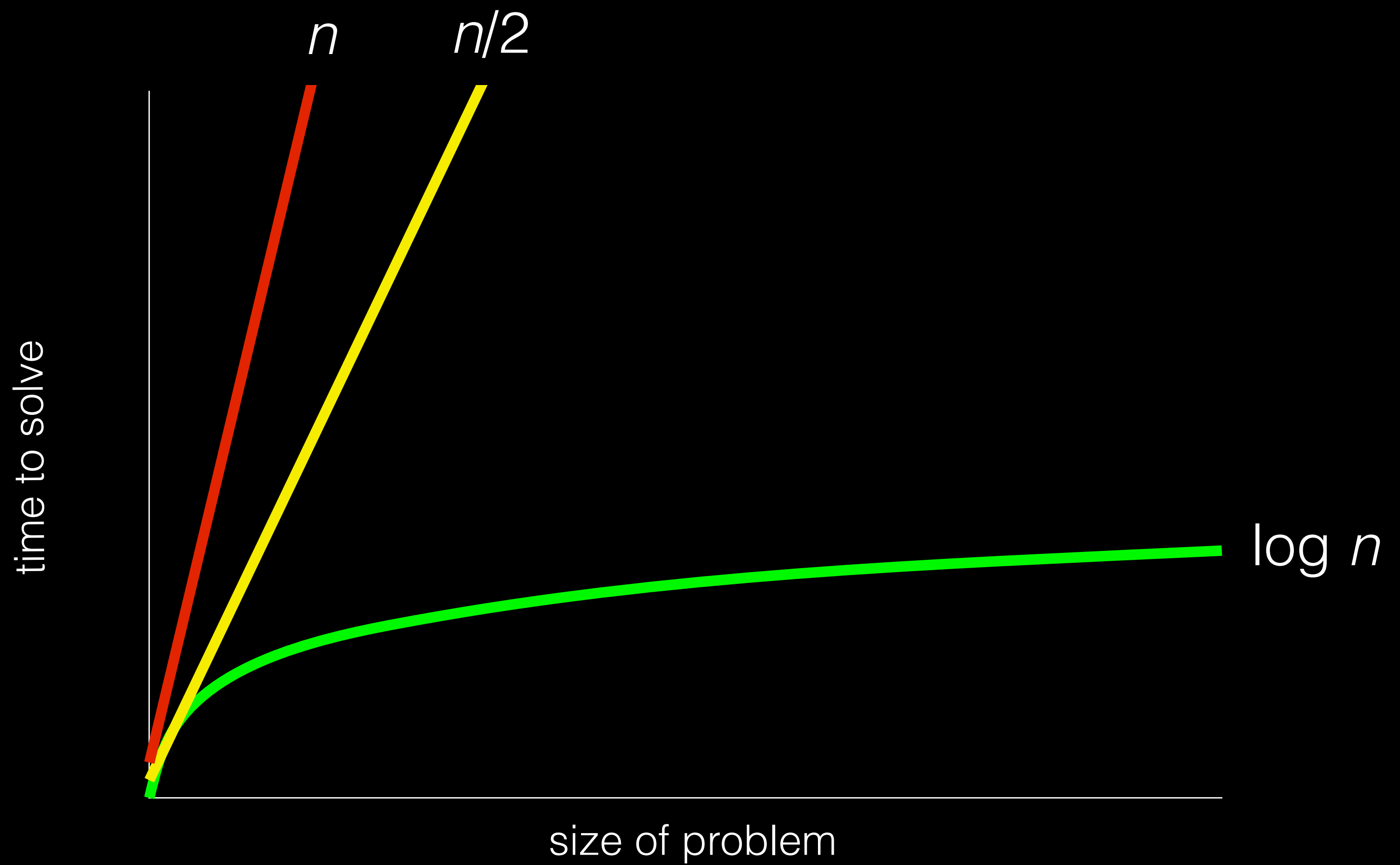
size of problem

time to solve



size of problem





Scratch

CS50 for MBAs

David J. Malan
malan@harvard.edu