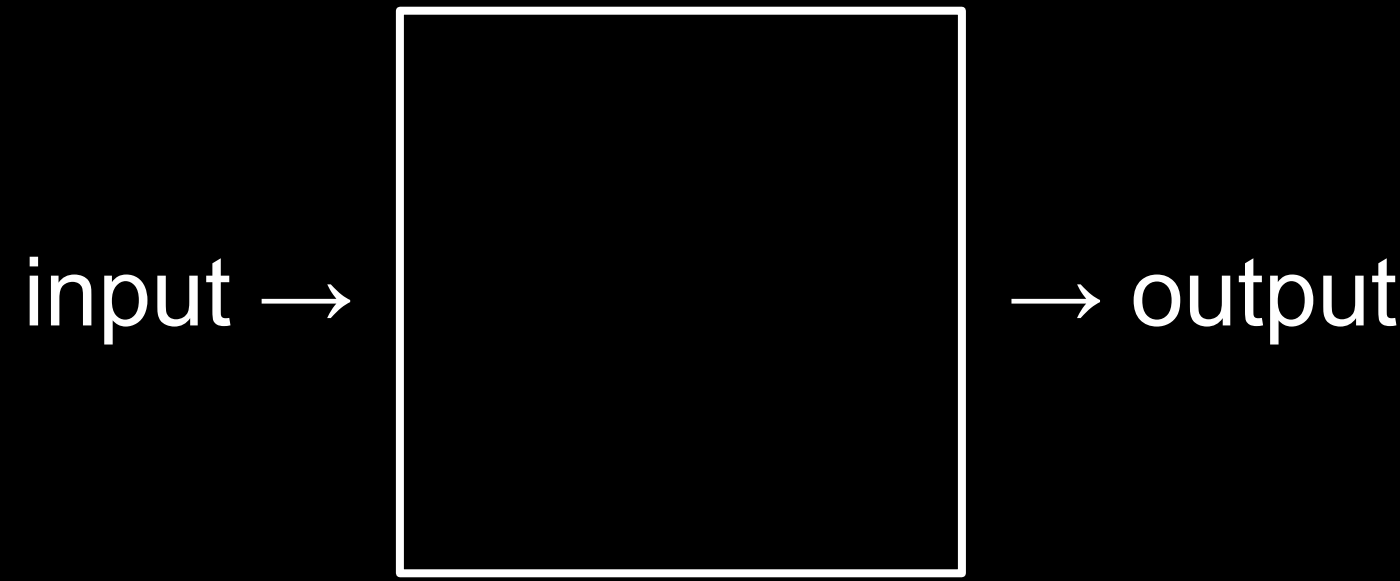
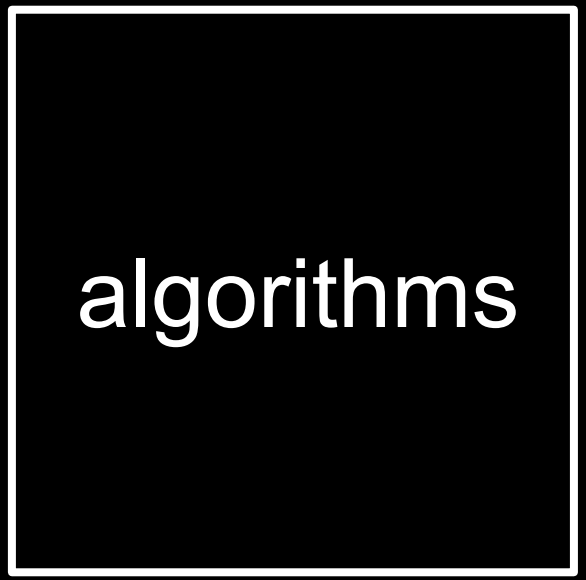
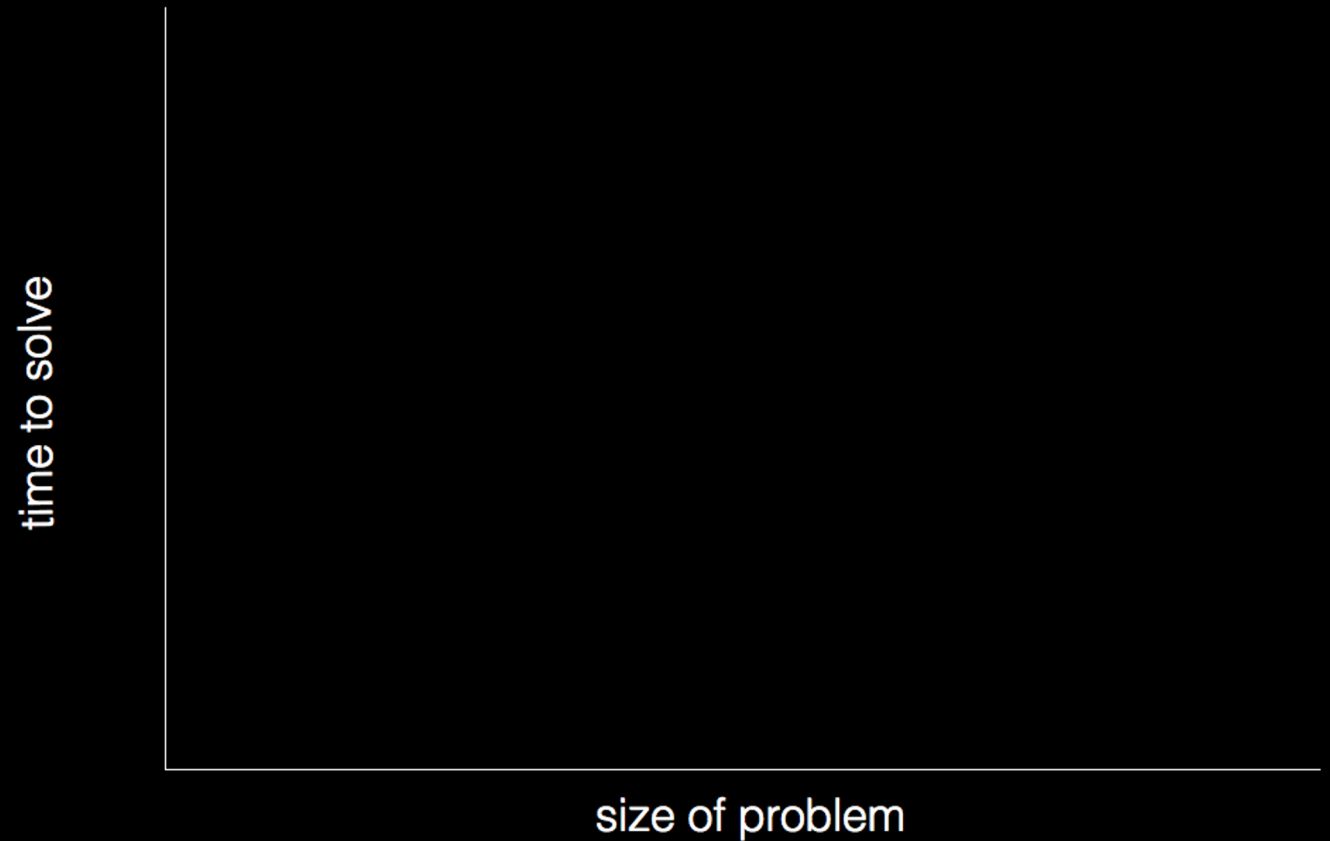
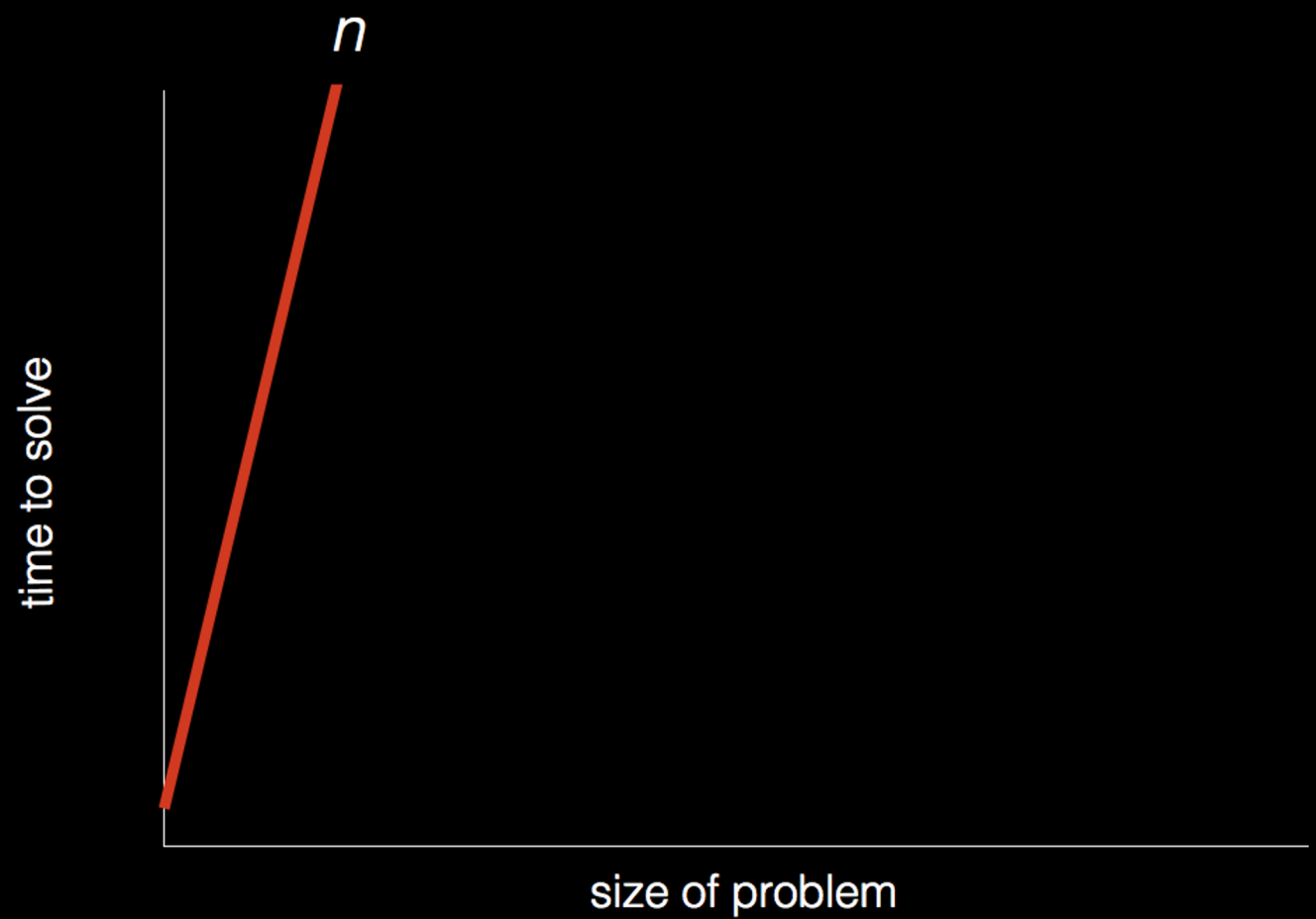
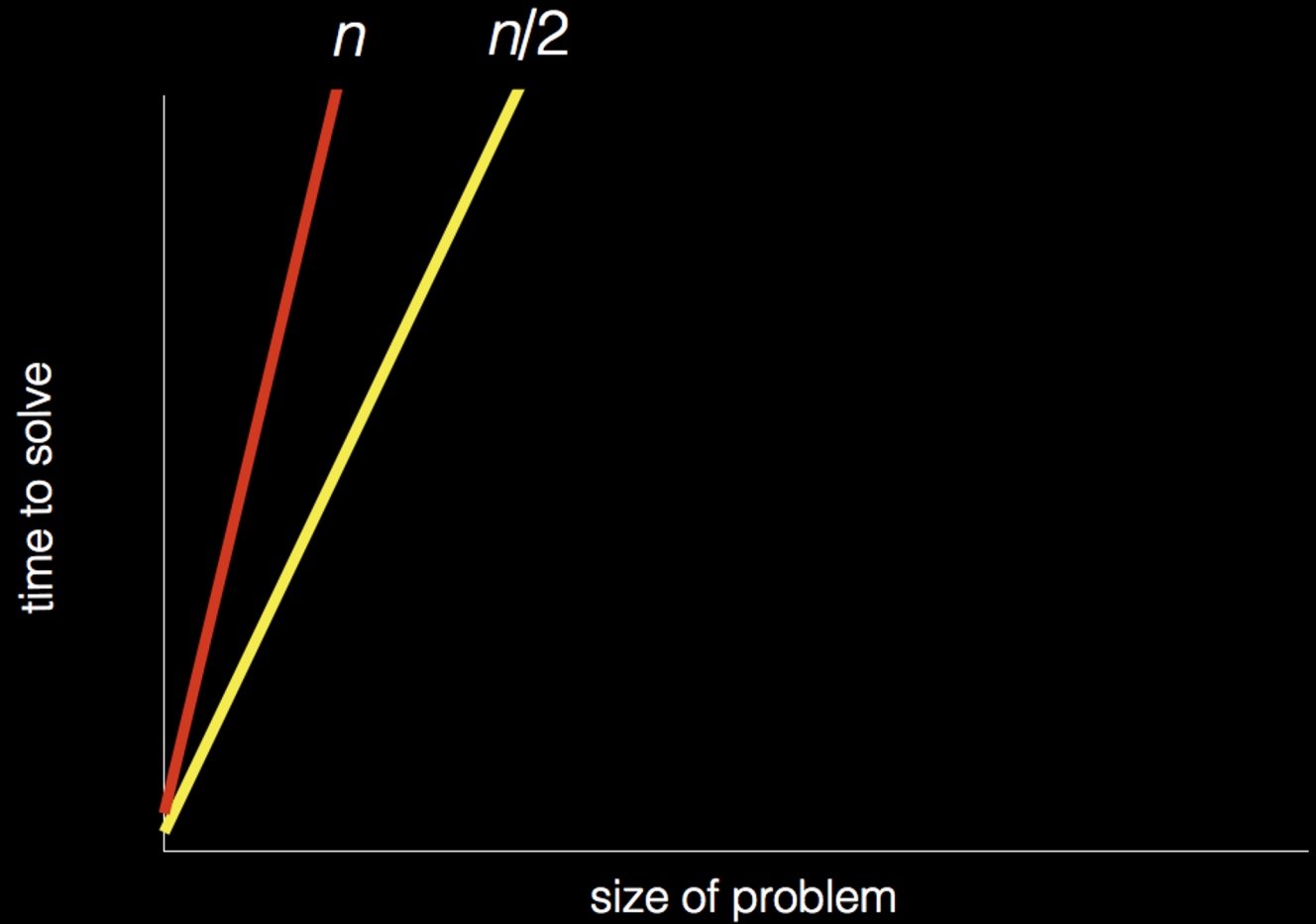

input →
→ output

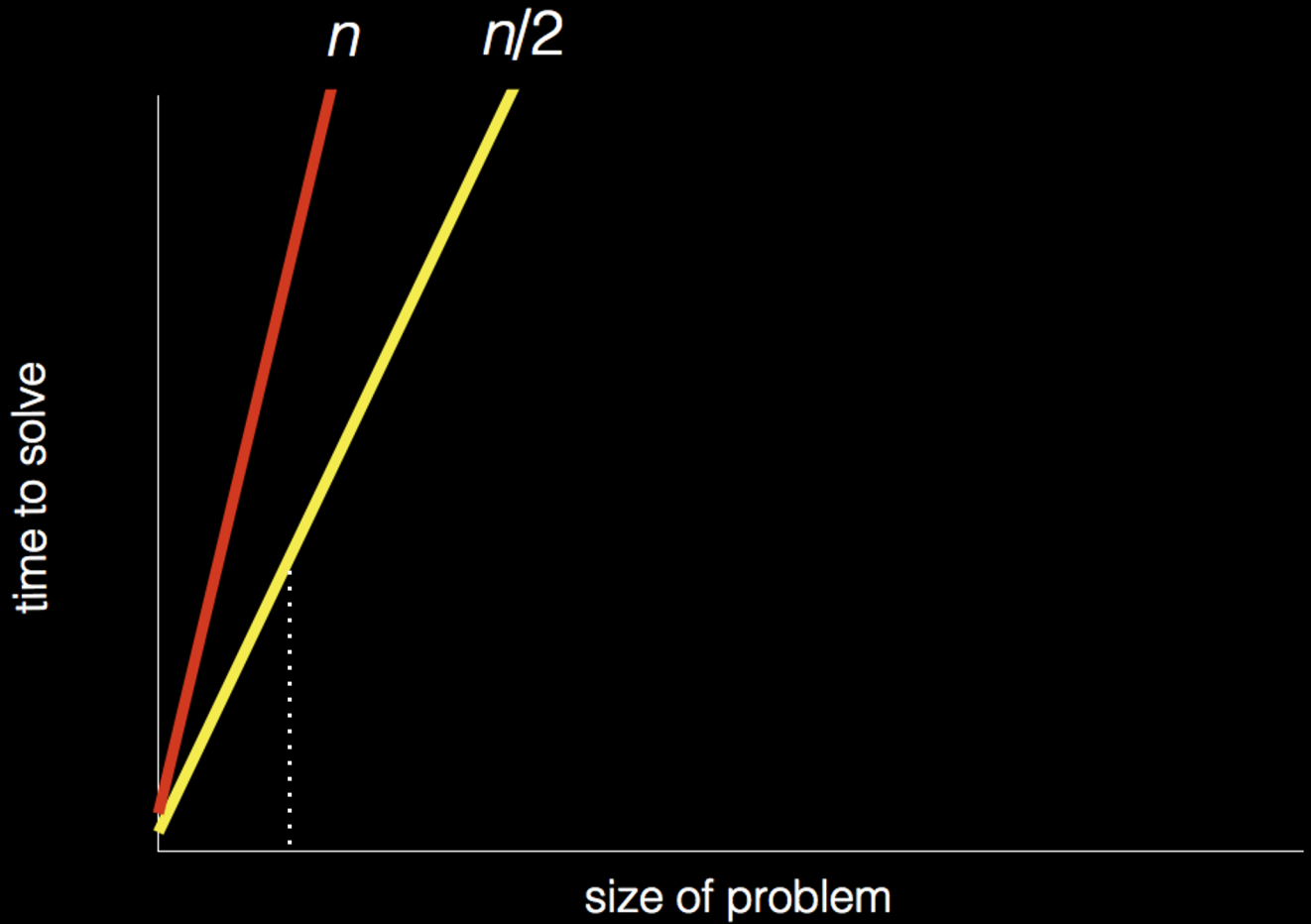

algorithms

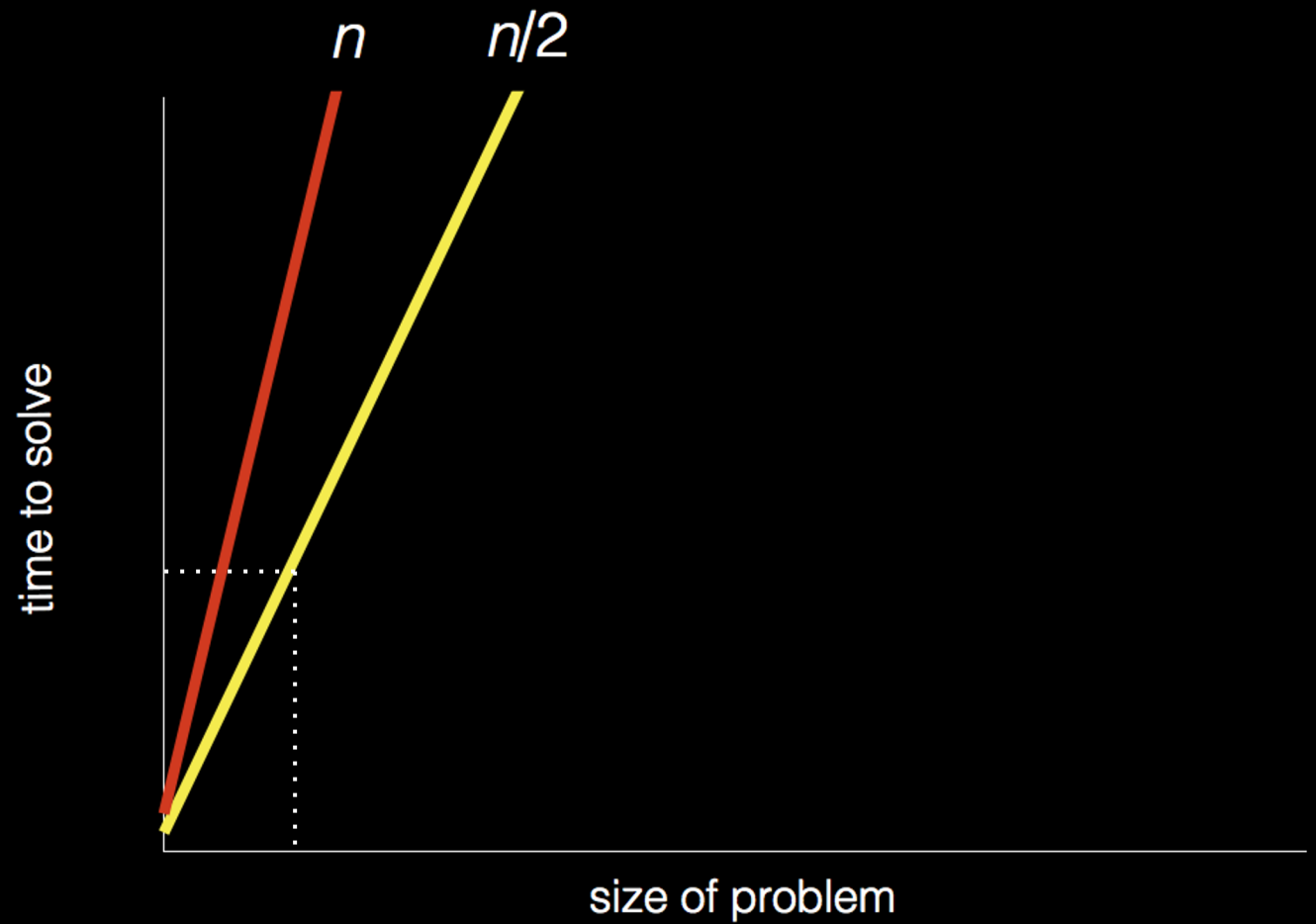
1024
512
256
128
64
32
16
8
4
2
1

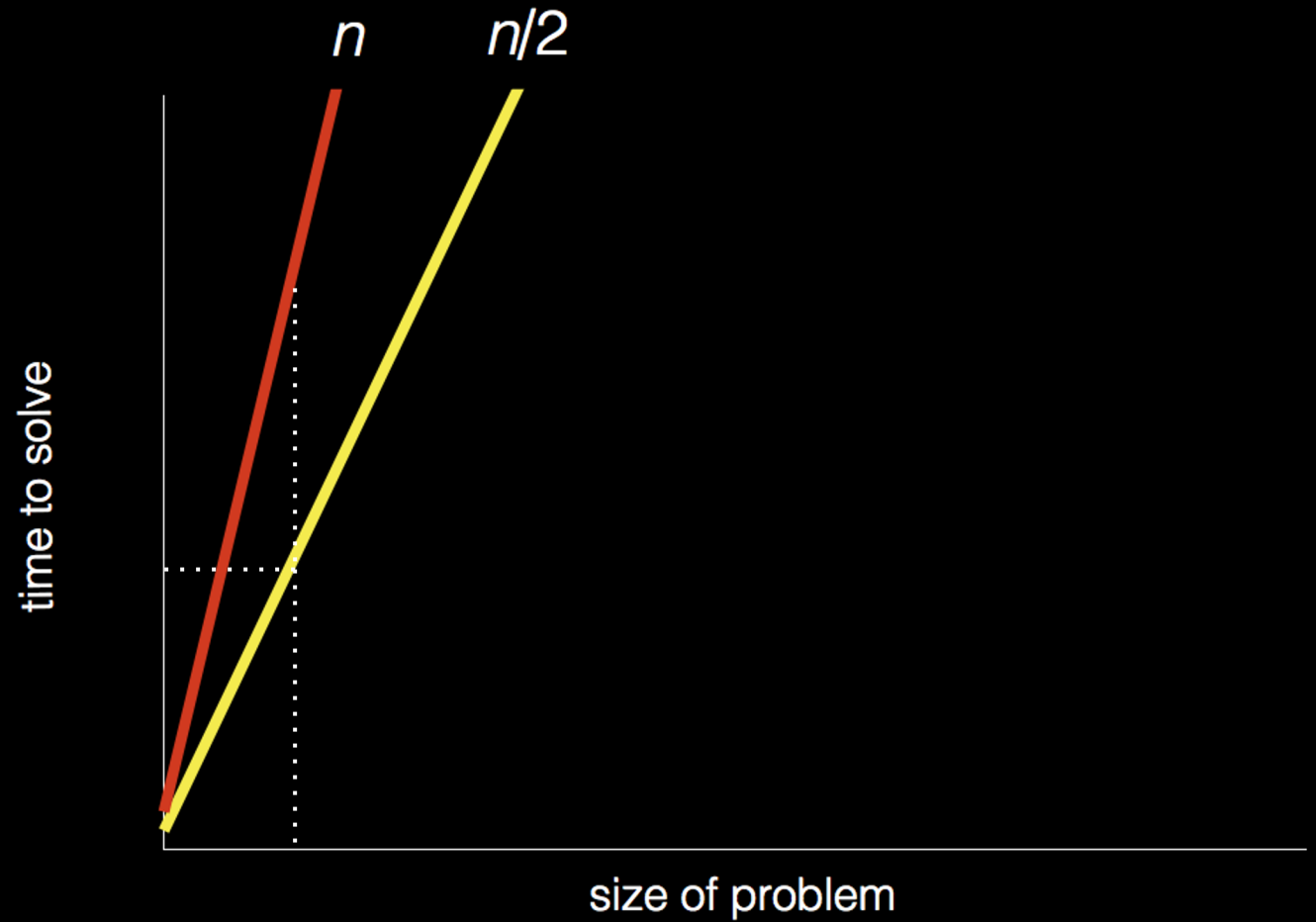

time to solve
size of problem

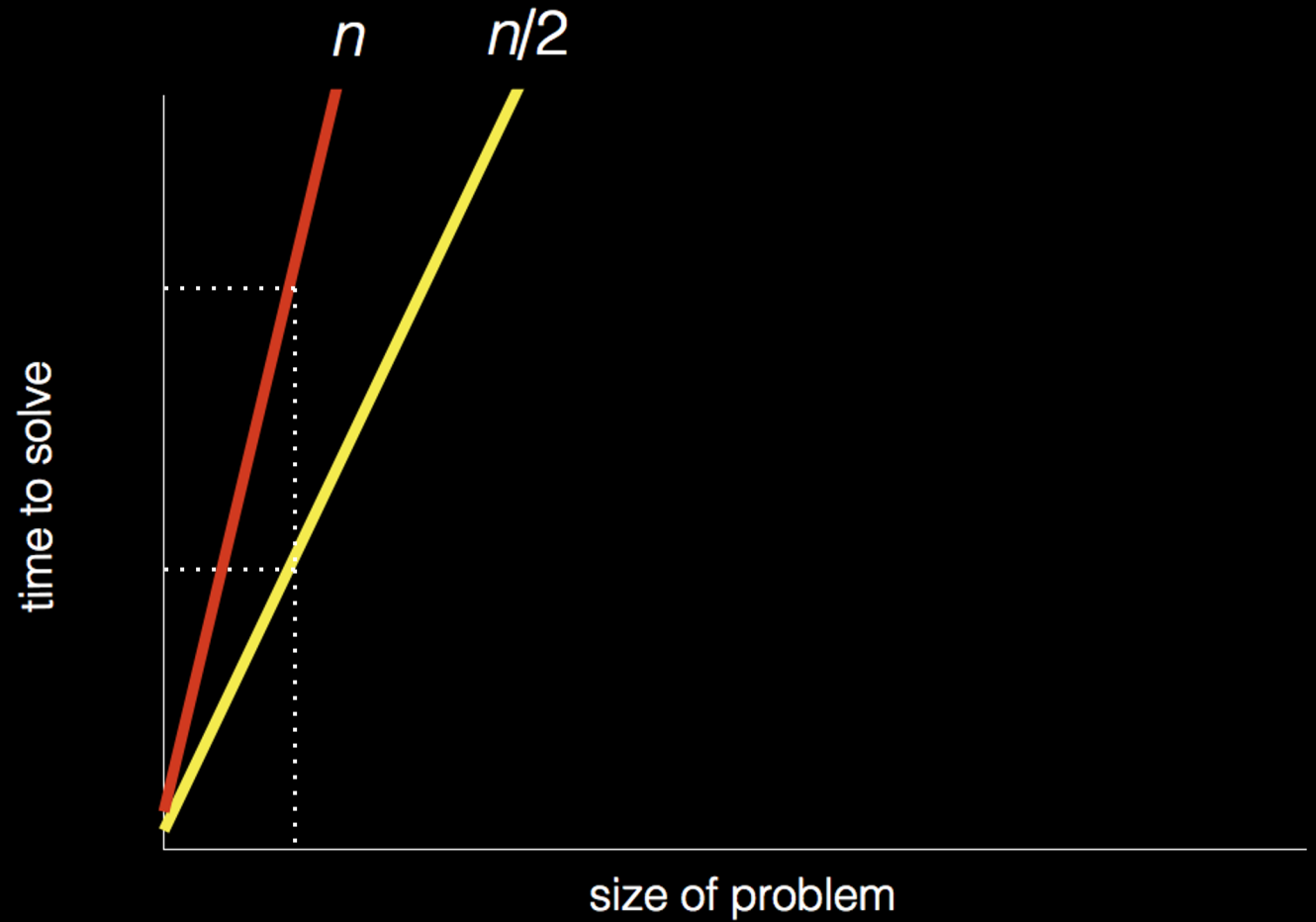

n
time to solve
size of problem

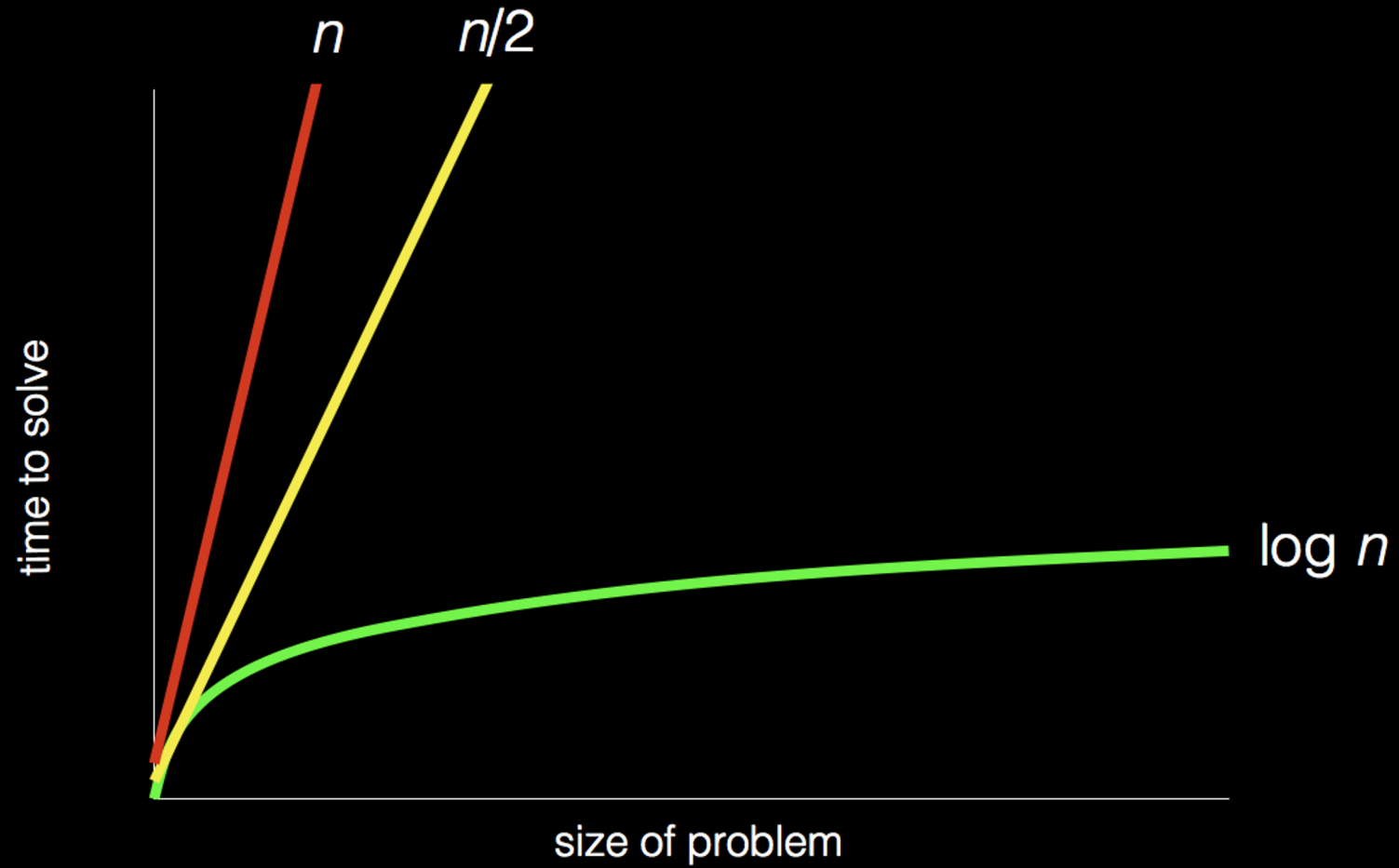

n
n/2
time to solve
size of problem


n
n/2
time to solve
size of problem


n
n/2
time to solve
size of problem


n
n/2
time to solve
size of problem


n
n/2
time to solve
size of problem


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

pseudocode

```
1   Pick up phone book
2   Open to middle of phone book
3   Look at page
4   If Smith is on page
5       Call Mike
6   Else if Smith is earlier in book
7       Open to middle of left half of book
8       Go back to line 3
9   Else if Smith is later in book
10      Open to middle of right half of book
11      Go back to line 3
12  Else
13      Quit
```

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3   Look at page
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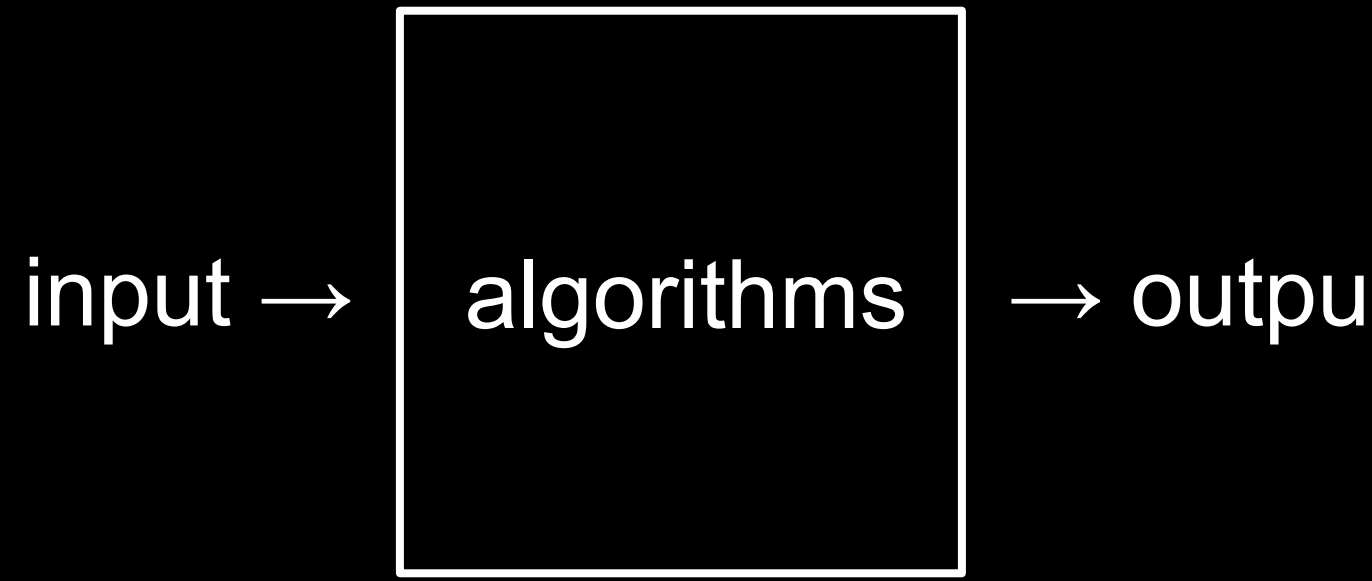
input →
algorithms
→ output