Detour: $\mathcal{O}$-notation

Idea: We are only interested in how time grows when input size grows, not in exact figures.

n	$\frac{1}{2}n$	$2n$	n^2	$\log n$	2^n
10	5	20	100	4	1024
11	5	22	121	4	2048
20	10	40	400	5	$1,000,000$
100	50	200	$10,000$	7	$1.27 \cdot 10^{30}$

$\mathcal{O}$-notation cont.

Method:

- decide which parameters are important
  (which may change for diff. inputs)
- order terms according to these in "increasing growth order"
- take largest term(s) w/o multiplicative constants

Example: $5n^5 + 20n^2 - 7n + 5 = \mathcal{O}(n^5)$

Careful: Rigourous definition exists and should be studied before employing method (lot of misuse around!)