15 3 50 17 2 1 20 1 3 10 999

15 3 50 17 2 1 20 1 3 10 999

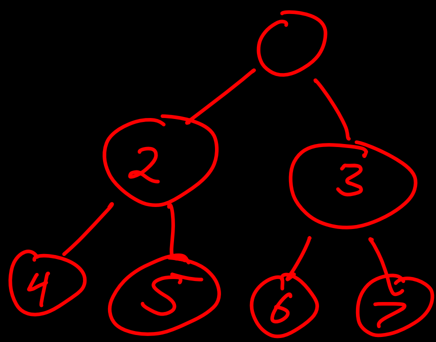
15 3 50 17 2 1 20 1 3 10 999

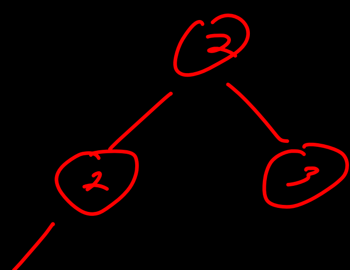
15 3 50 17 2 1 20 1 3 10 999

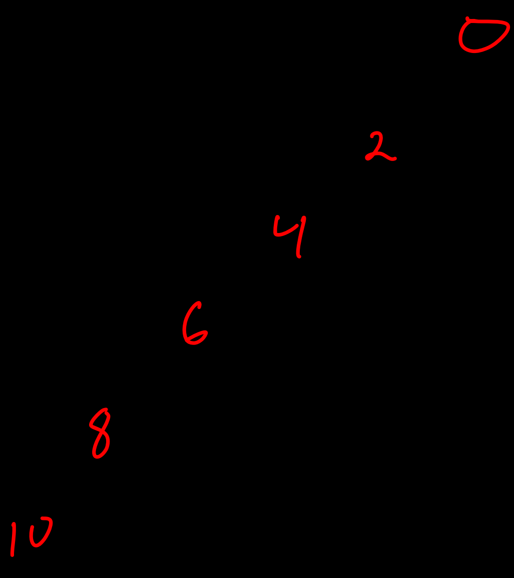
15 3 50 17 2 1 20 1 3 10 999

If Index mod other index add it to sum of that

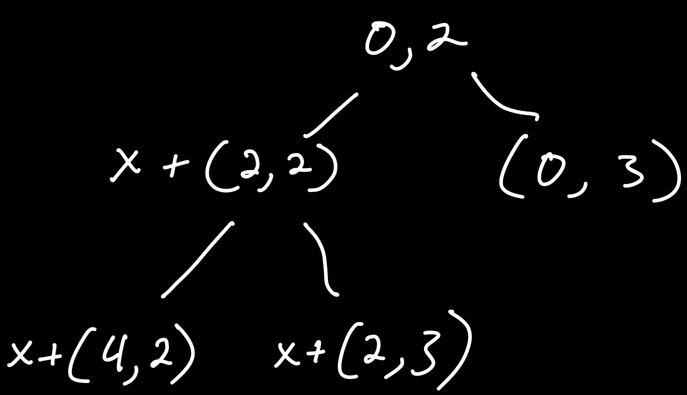
$O(n^2)$

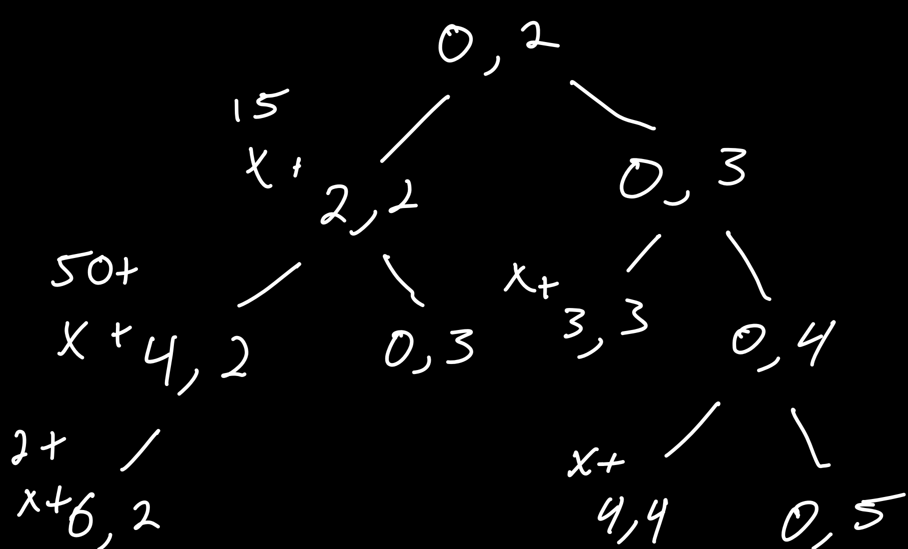


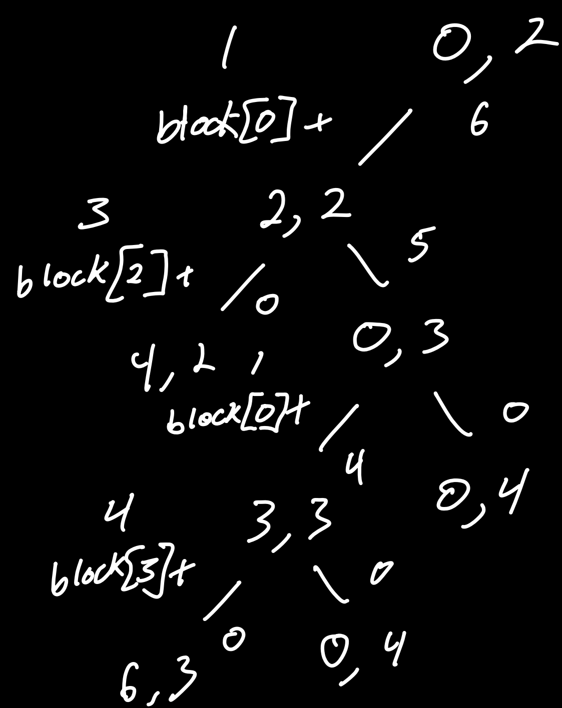


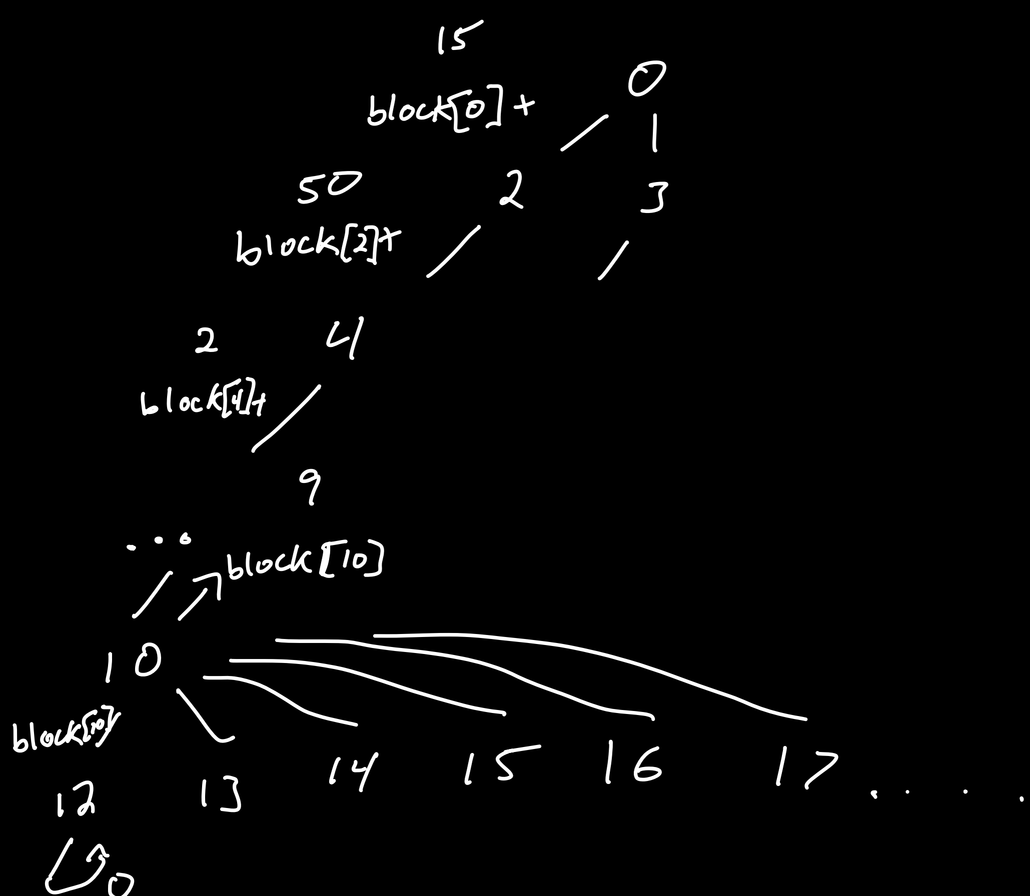


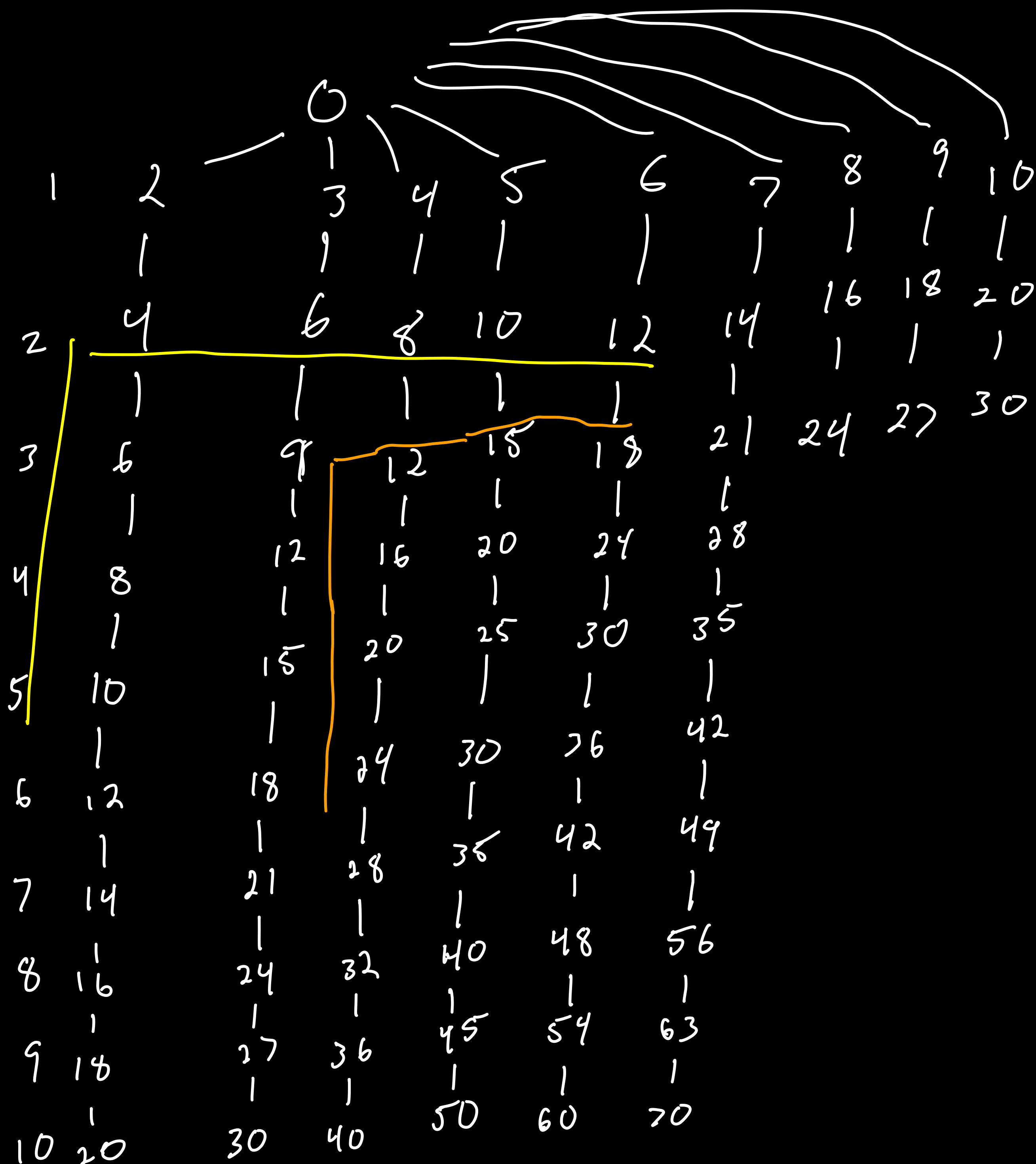
15	3	50	17	2	1	20	1	3	10	999
0	1	2	3	4	5	6	7	8	9	10






1
0, 2
block[0] +
6
3
2, 2
5
block[2] +
0
4, 2
1
0, 3
block[0]+
0
4
4
0, 4
3, 3
block[3]+
0
0
6, 3
0, 4


15
0
block[0] +
1
50
2
3
block[2]+
2
4
block[4]+
9
. . .
block[10]
10
block[10]
12
13
14
15
16
17 . . . .
0


0
1 2 3 4 5 6 7 8 9 10
4 6 8 10 12 14 16 18 20
21 24 27 30
2 3 4 5 6 7 8 9 10
6 8 10 12 14 16 18 20
9 12 15 18 21 24 27 30
12 16 20 24 28 32 36 40
15 20 25 30 35 40 45 50
18 24 30 36 42 48 54 60
21 28 35 42 49 56 63 70

0, 2   0, 3

2,2 + 2,4 + 2,6 + 2,8 + 2,10 > 3,3 + 3,6 + 3,9

Subtract each iteration from

blocks[n+i] - blocks[n+(i+1)]

if negative [n-1] is bigger

if positive [n] is bigger

1   2   3   4   5

$3 - 4 = -1$ right leads

$-1 - 5 = -6$ left leads

15   3   6   17   2   1   20

$6 - 17 = -11$

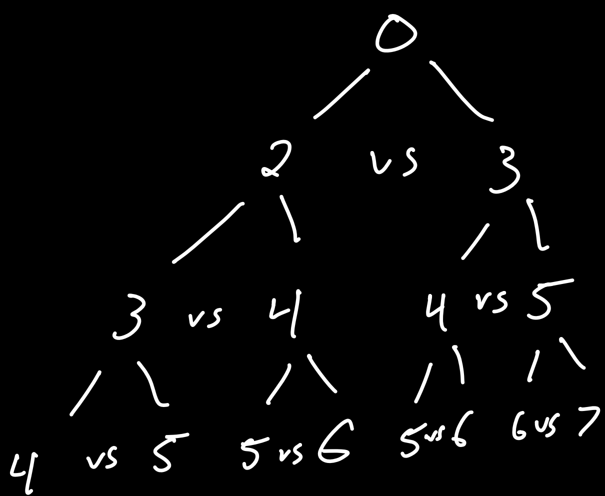
if neg

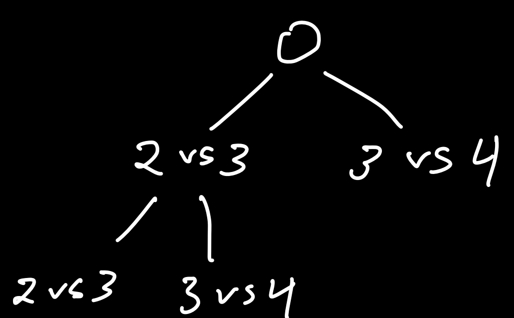
$2 - abs(-11) = -8$

else

6 2 20

17 20





0 1 2 3 4 5 6 7 8 9 10

2 : 2 4 6 8 10 5

3 : 3 6 9 3

5 : 5 10 2

7 : 7 1

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

2: 2 4 6 8 10 12 14 7

3: 3 6 9 12 15 5

5: 5 10 15 3

7: 7 14 2

11: 11 1

13: 13 1

is $(5+10) > (3+6+9+12)$

is $(5+15) > (2+4+6+8+10+12)$

is $7 > ($

0 1 2 3 ~~4~~ 5 ~~6~~ 7 ~~8~~ ~~9~~ ~~10~~

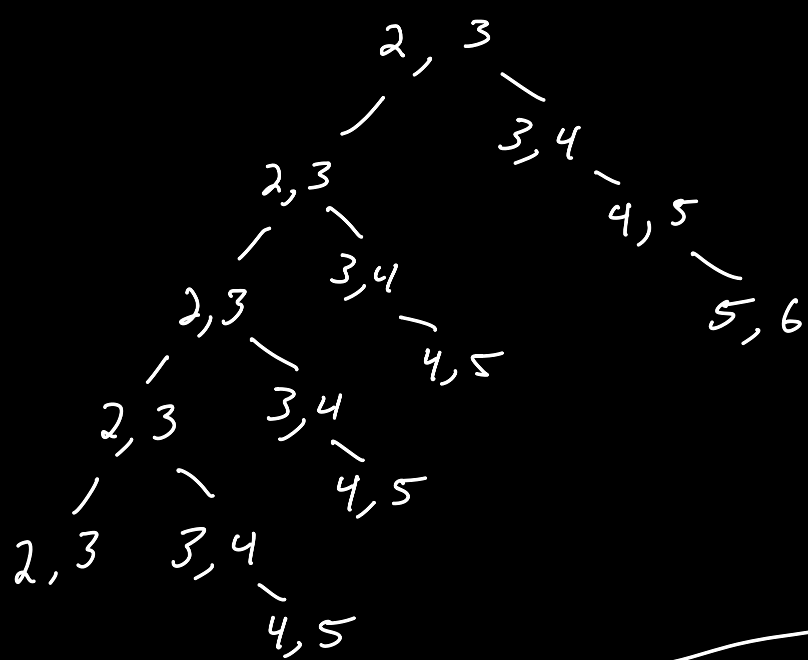
2: 4 6 8 10

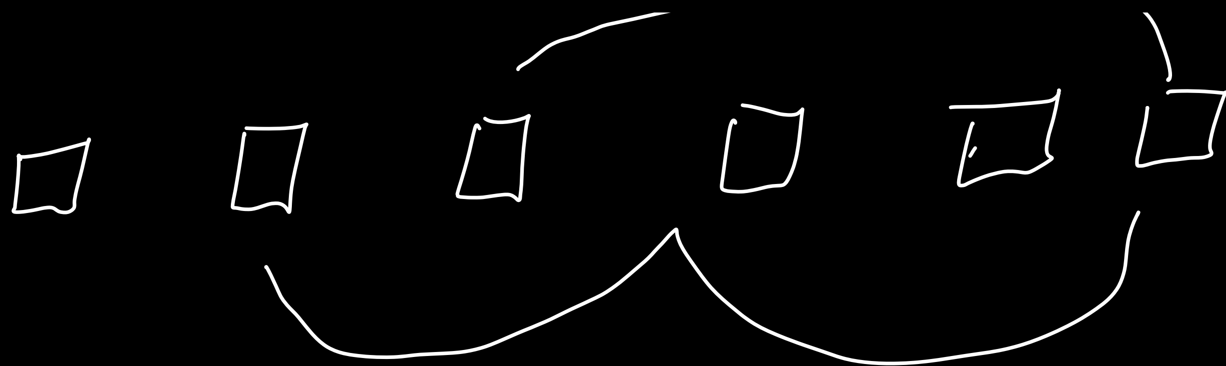
3: 3 6 9

5:

					9		0
						10	0
0	0	0	0	0	0	0	0

For length 10





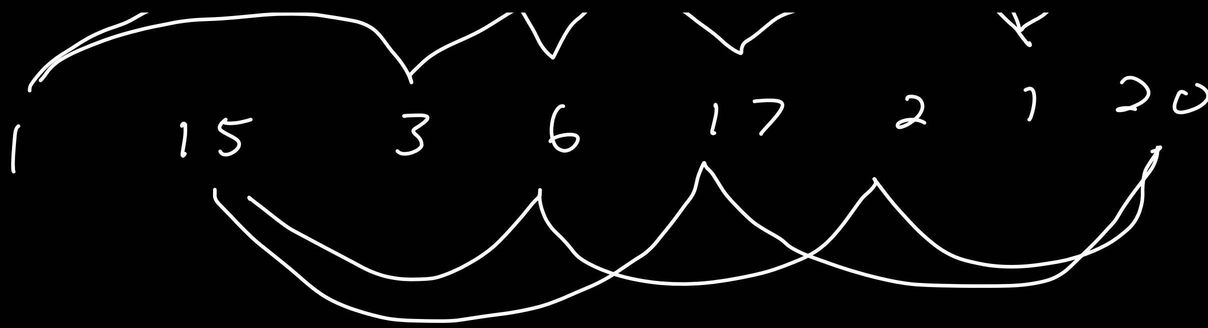
15 3 $\underline{6}$ $\overline{17}$ $\underline{2}$ 1 $\underline{\overline{20}}$

6 - 17

-11 - 2

$\frac{6}{17}$

Only need to worry about jumps of 2 or 3



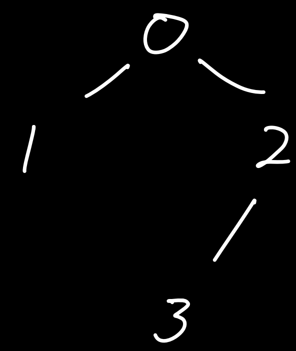
Either take block and start jump
or dont and move to next block

(1, 2)

1+(3,2) 1+(6,3) 0+(15, 2)

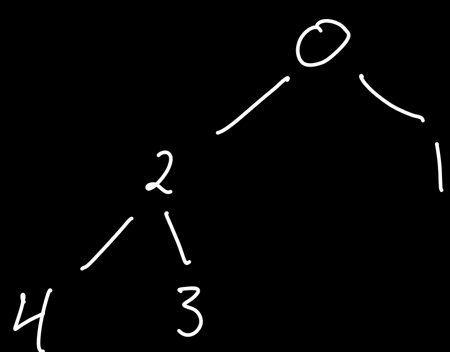
1	15	3	6	17	2	1	20
0	1	2	3	4	5	6	7

0: 0+2 + 4+6 + 8 — if i%2
1: 0 + 3 + 6 + 9 — if i%3
2: 1 + 3 + 5 + 7 + 9 — if (i−1)%2
3: 1 + 4 + 7 — if (i−1)%3



$1 - 1 = 0$

0 %



catalin number

a e i o u w x y z

a e i q v w x y z

a e i u w x y z

$T(n) = aT(n/b) + f(n)$

$T(n) = \Theta(n^{\log_b a})$ if $c < \log_b a$

$T(n) = \Theta(n^c \log n)$ if $c = \log_b a$

$T(n) = \Theta(n^c)$ if $c > \log_b a$

$c = 2$

ex. $T(0) = T(1) = O(n^2)$

$T(n) = T(n/2) + c$ (for $n > 1$)

$b = 2$

$a = 1$

$\log_b a = \log_2 1$

$c > \log_2 1$

so $T(n) = \Theta(n^2)$

w/ c being in only 2 initial conditions we either have 0^2 or 1^2 so neither effects runtime since they're constants

~~This is an example of recursive application to master theorem~~

$T(0), T(1) = O(1)$

else $T(n) = T(n/2) + c$

$c = 0$
$a = 1$
$b = 2$

$\log_2 1 = 0 \qquad 0 = 0$

$\Theta(n^0 \log n) = \Theta(\log n)$

$T(0), T(1) = O(m^2)$ → constants that don't effect answer

else $T(n) = T(n/2) + c$

but since recursion can run this many times its no longer constant

$\Theta(\log n)$

210   210

$\binom{n}{k} \quad \binom{10}{6} = \binom{10}{4}$