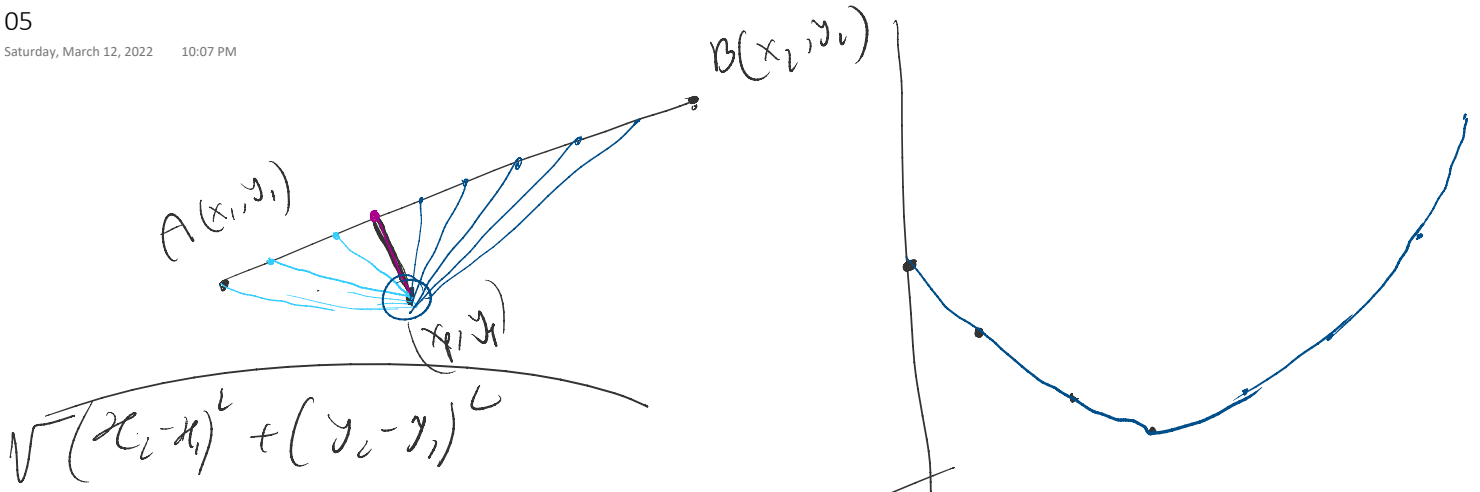
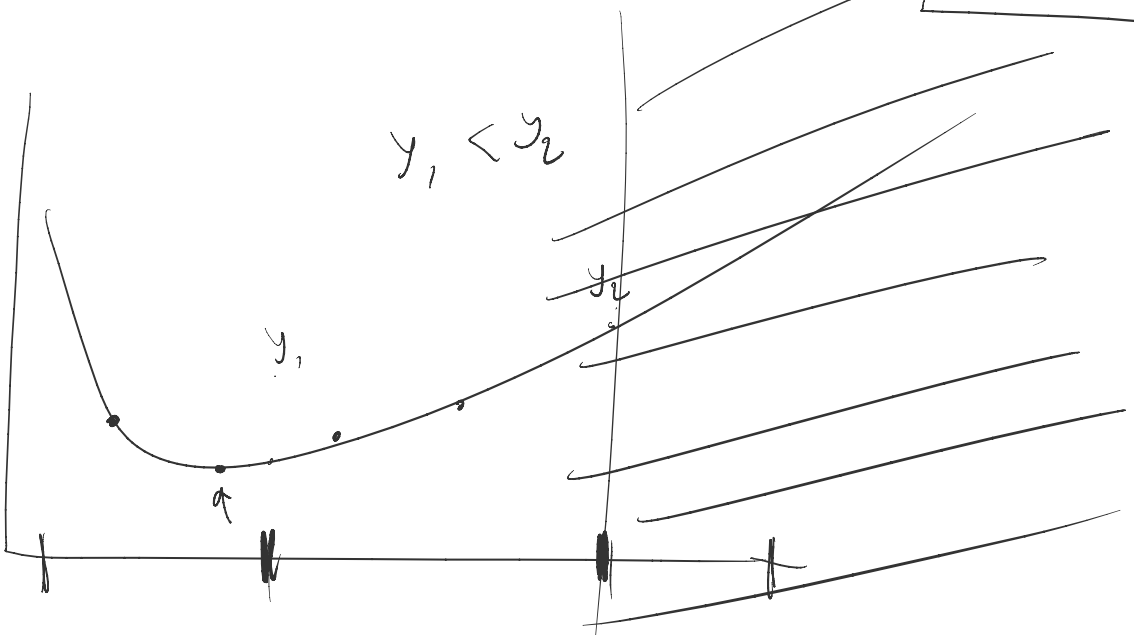
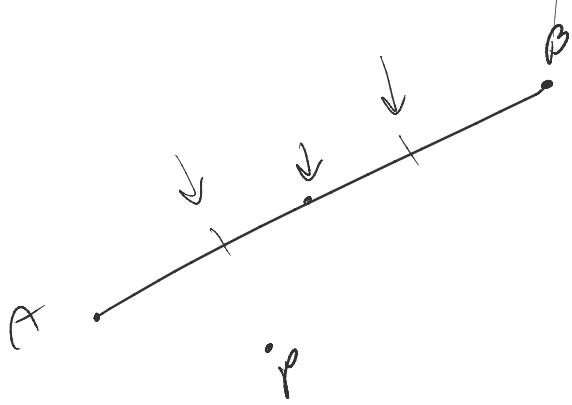
05

Saturday, March 12, 2022 10:07 PM



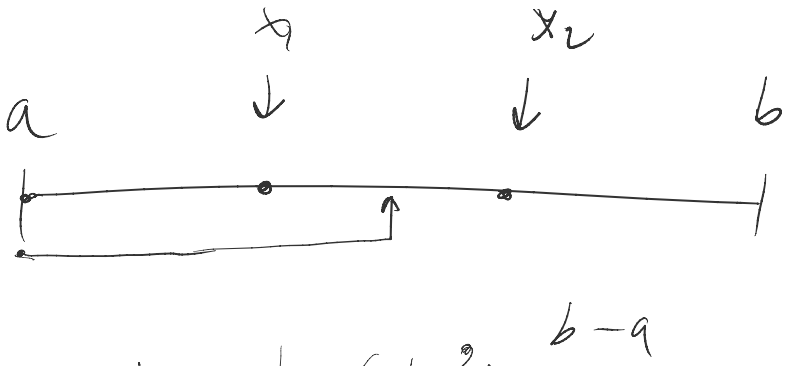




① direct

② parametric

$\frac{x_1 + x_2}{2}$, $\frac{y_1 + y_2}{2}$



$\frac{a+b}{2}$

$= a + \frac{b-a}{2}$

$a + \frac{b-a}{3}$ | $a + 2\cdot\frac{b-a}{3}$

$b - \frac{b-a}{3}$

$\frac{}{2}$

$= \frac{2a+b-a}{2} = \frac{a+b}{2}$

$x_1 + \frac{x_2 - x_1}{3}$

$\sqrt{120}$

$\frac{1}{2}$

10

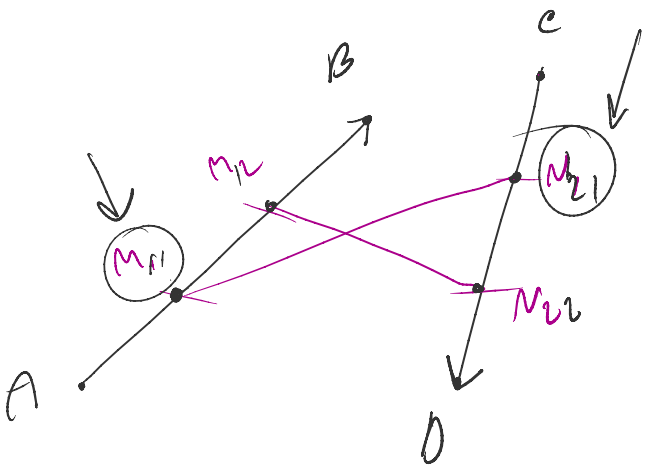
$y_1 < y_2$

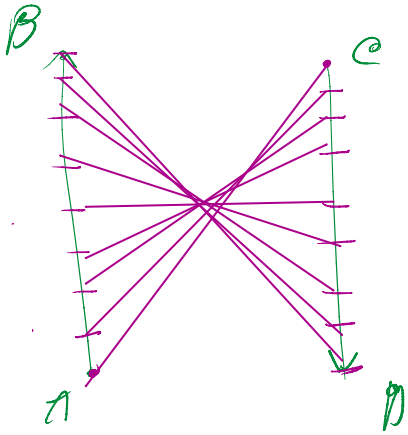
11

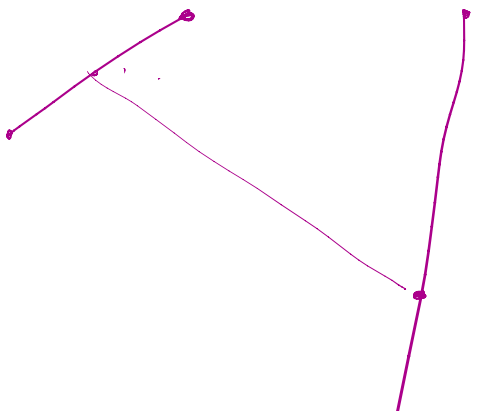
$\frac{1}{2^x} \leq 10^{-6}$

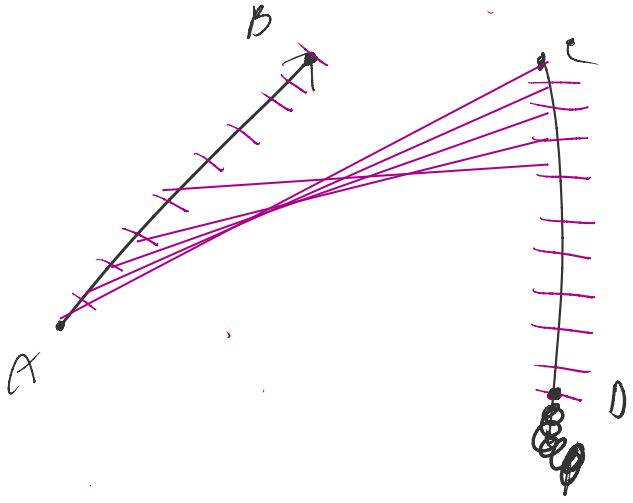
$2^x \gtrsim 10^6$

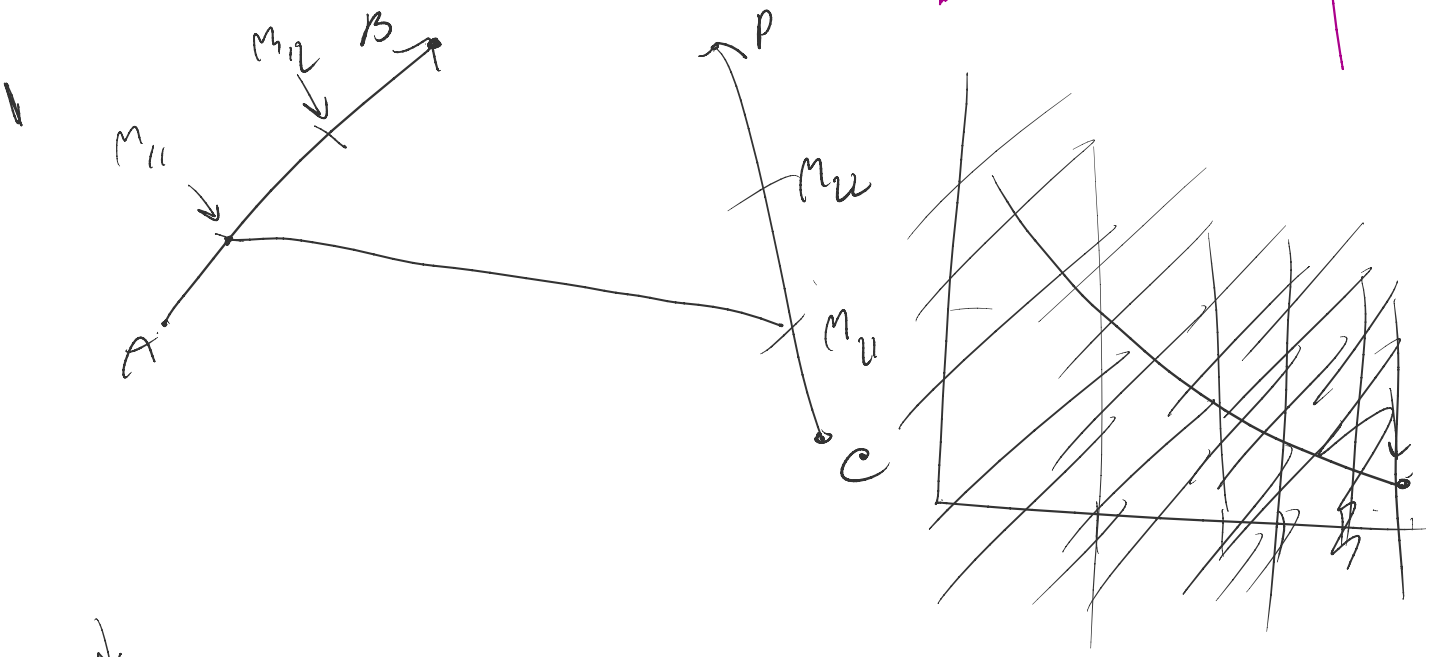
$x \gtrsim \log_2 10^6 \approx 18$

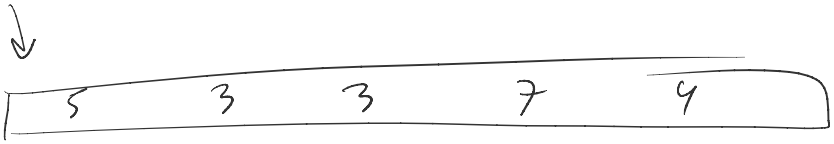




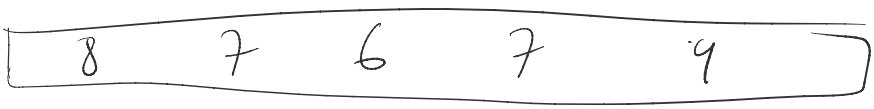


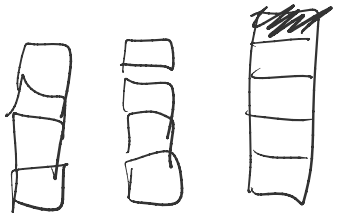

B
C
A
D

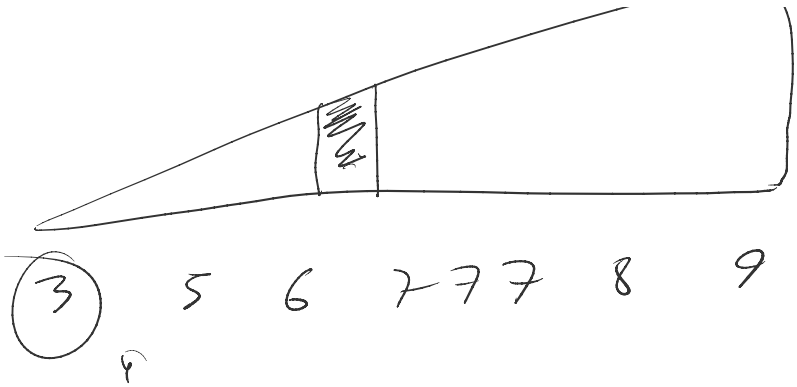

M_{12}
B
M_{11}
A
P
M_{22}
M_{21}
C


5
3
3
7
4


5


8
7
6
7
4





↓ ↓ ... ... ↑ ↑ ↑

3 5 6 9 10 20

3=0+2+3+6+7+17=35

9=1+1+2+5+6+16 =31

5=2+0+1+4+5+15 =27

6=3+1+0+3+4+14 =25

7=4+2+1+2+3+13=25

8=5+3+2+1+2+12=25

9=6+4+3+0+ =25

fact(n)

$N! = 1 \cdot 2 \cdot 3 \cdots$

$= N \cdot (N-1) \cdot (N-2) \cdots 3 \cdot 2 \cdot 1$

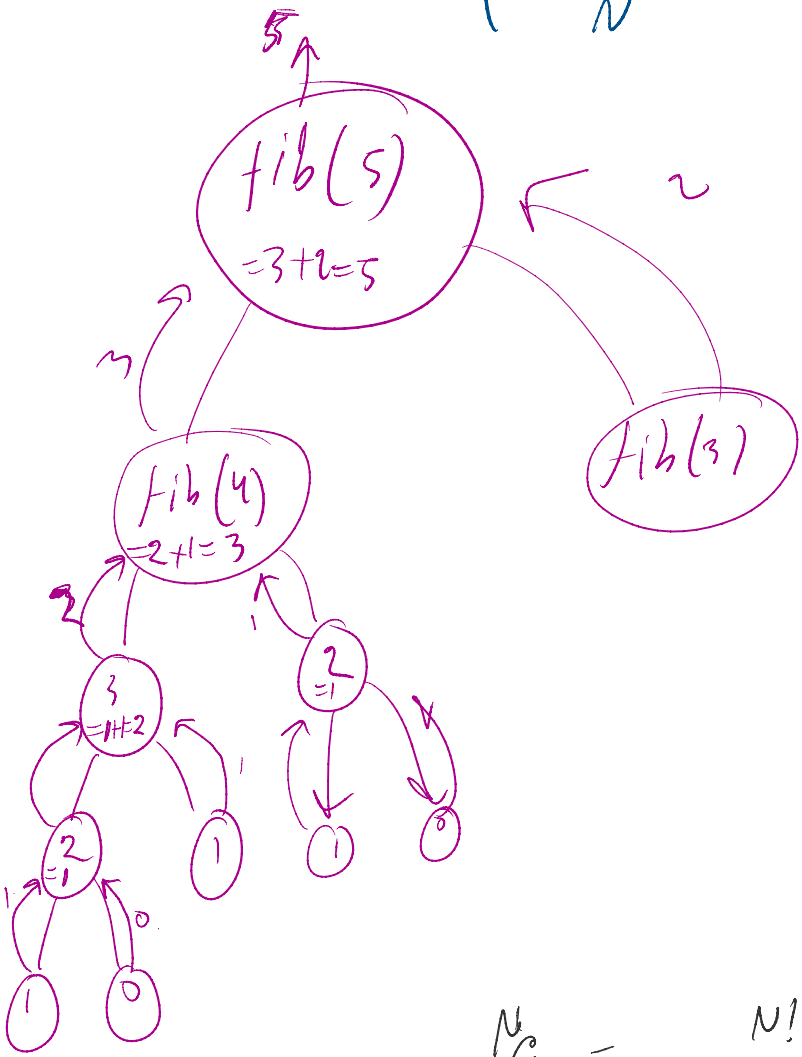
$= N \cdot (N-1)!$

```
fact(N) {
  if(N==0) ret 1;
  N* fact(N-1);
```

```
    N * fact(N-1);
}
```

	0	1	2	3	4	5	6	7	8	9
fib(N)	0	1	1	2	3	5	8	13	21	34 ...

$$fib(N) = \begin{cases} fib(N-1) + fib(N-2) & \text{if } N > 1 \\ N \end{cases}$$



$$^{N}C_{r} = \frac{N!}{r!(N-r)!}$$

$$= \frac{N \cdot (N-1) \cdot (N-2) \cdots (N-r+1)}{r!}$$

$$^{N}C_{r} = {}^{N-1}C_{r-1} + {}^{N-1}C_{r}$$