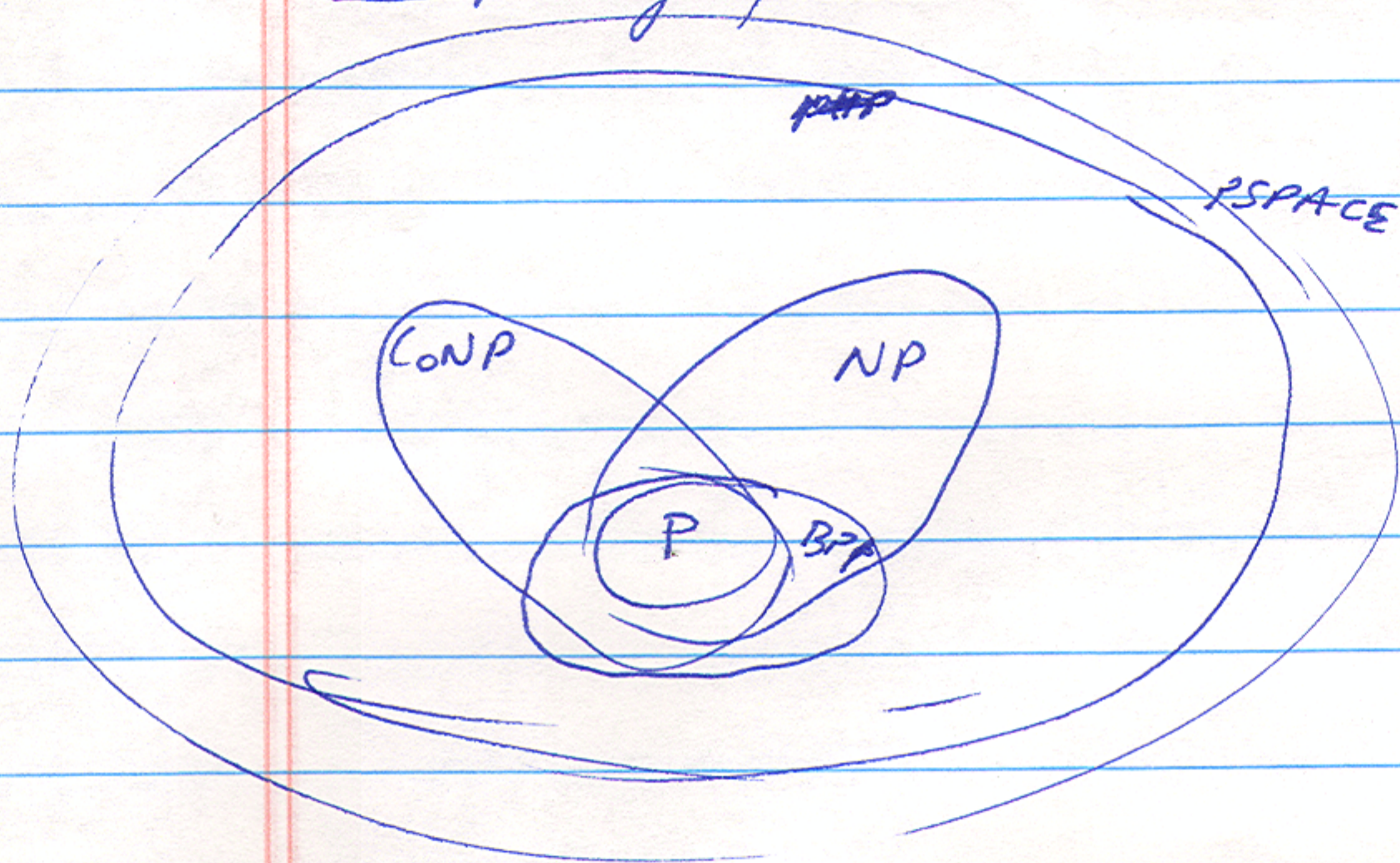


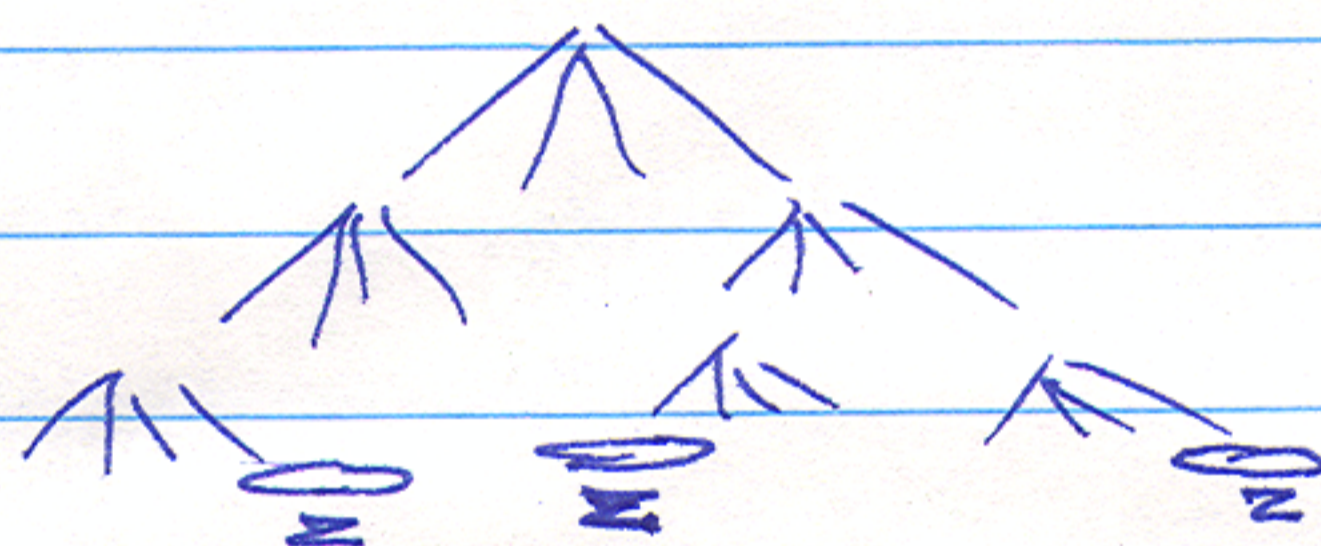
# Lecture 6 :

## Complexity picture:



$$i \quad | \quad | \quad | \quad | \quad | \quad | \quad 0 \quad - \quad x \quad - \quad -$$

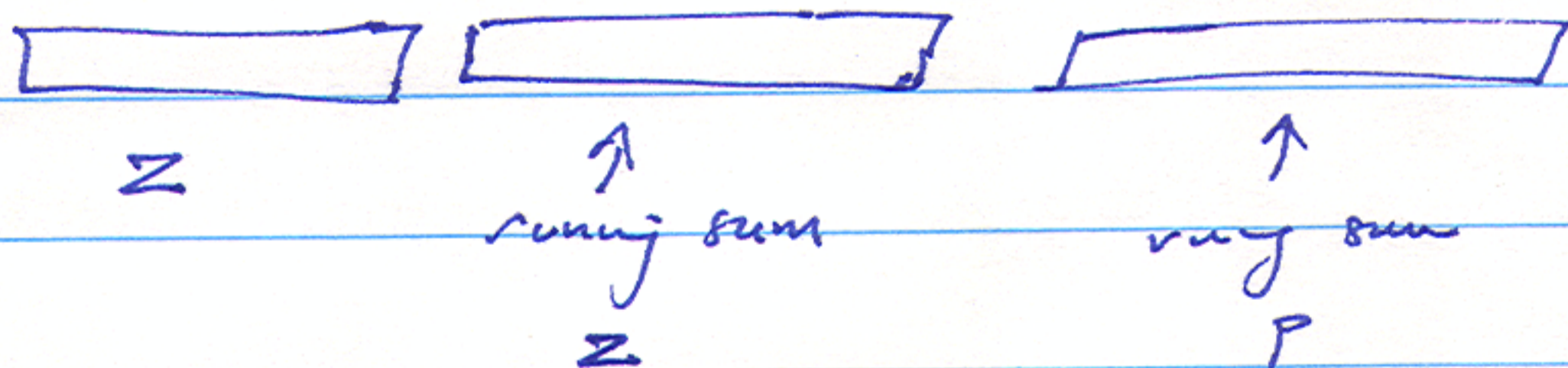
$$x \rightarrow \cancel{\alpha y + \beta z} \quad \alpha_0 y_0 + \alpha_1 y_1 + \alpha_2 y_2 + \alpha_3 y_3.$$



interference

~~z~~  $\alpha(z, P)$  easy to compute.

$$\sum_{z=0}^x \left| \sum_P \alpha(z, P) \right|^z$$



polynomial time in  $x$  so  $|z| \leq \text{poly}(x)$ .

#P

$$R(x, z) = \begin{cases} 0 \\ 1 \end{cases}$$

$$f(x) = \sum_z R(x, z).$$

Problem ~~is~~ +ve & -ve.

$$\sum_z \sum_{P_1, P_2 \text{ +ve}} \alpha(z, P_1) \alpha(z, P_2) - \sum_{P_1, P_2 \text{ -ve}} \alpha(z, P_1) \alpha(z, P_2)$$