

$$\begin{pmatrix} \hat{x}_1 \\ \hat{x}_2 \end{pmatrix} = \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix} \begin{pmatrix} \hat{s}_1 \\ \hat{s}_2 \end{pmatrix}$$

$$\begin{pmatrix} s_1 \\ s_2 \end{pmatrix} = \begin{pmatrix} \dots \\ 0 \dots \end{pmatrix}$$

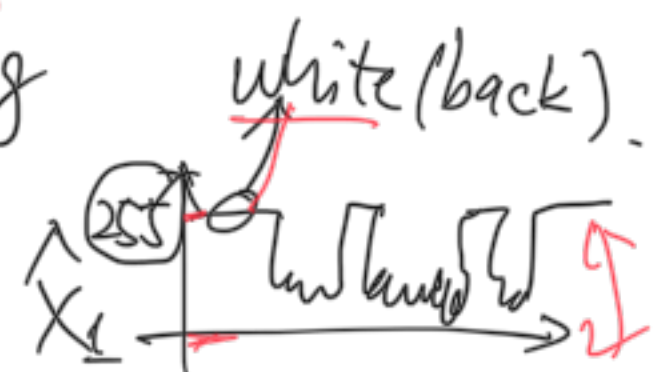
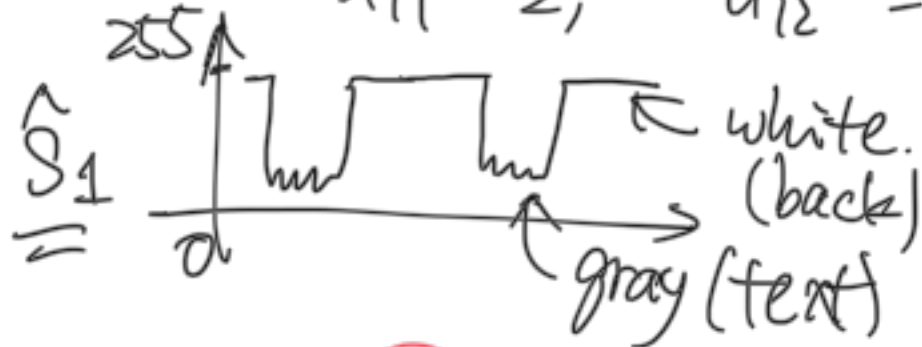
↓  
[0, 255]

$$\hat{x}_1 = a_{11} \cdot \hat{s}_1 + a_{12} \cdot \hat{s}_2$$

↓ [0, 255]      ↓ [0, 255]      ↓ [0, 255]

$$a_{11} + a_{12} = 1$$

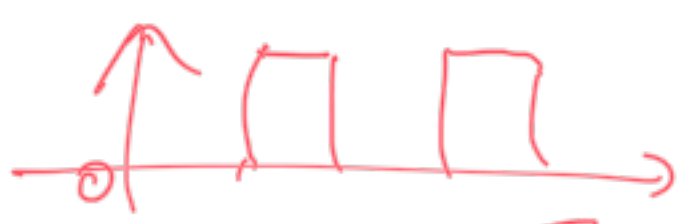
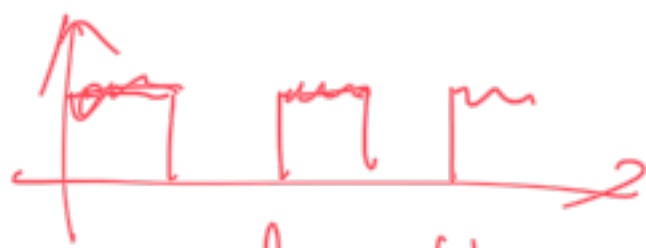
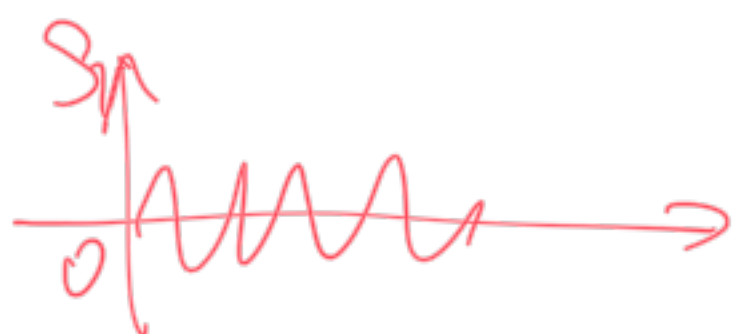
$$a_{11} = 2, \quad a_{12} = 8$$



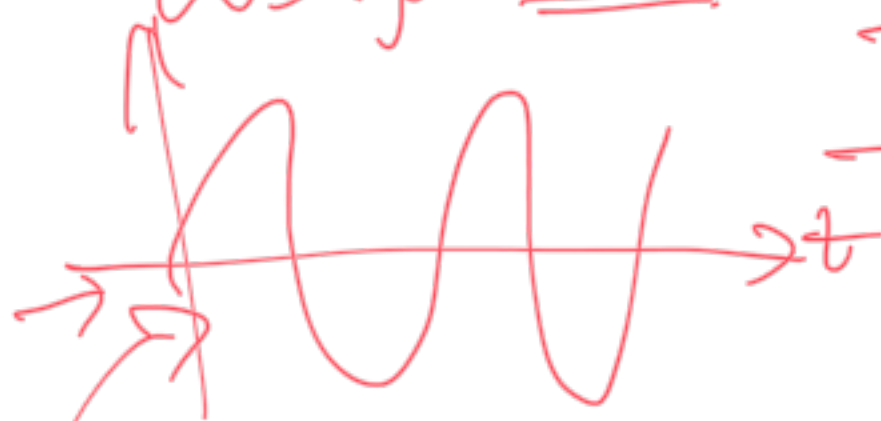
$$A = \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix} \cdot \begin{pmatrix} s_1 \\ s_2 \end{pmatrix}$$

$$a_{11}^2 + a_{21}^2 = 1$$

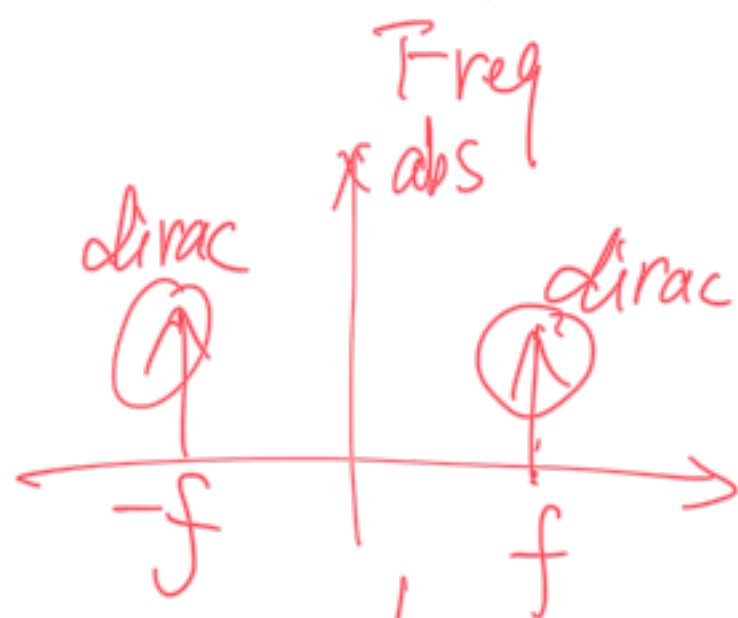
$$T \quad T \quad W \quad X = A \cdot S$$



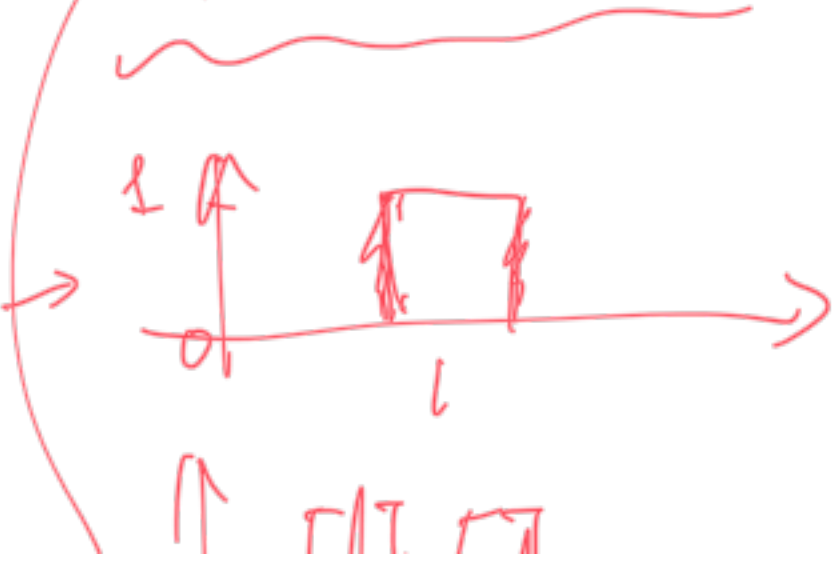
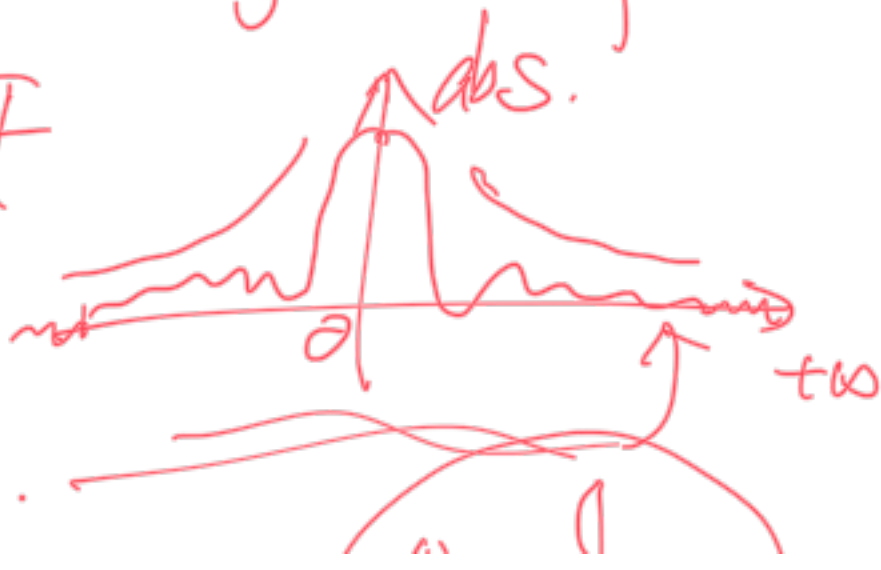
cos f.t. time.



TF



TF

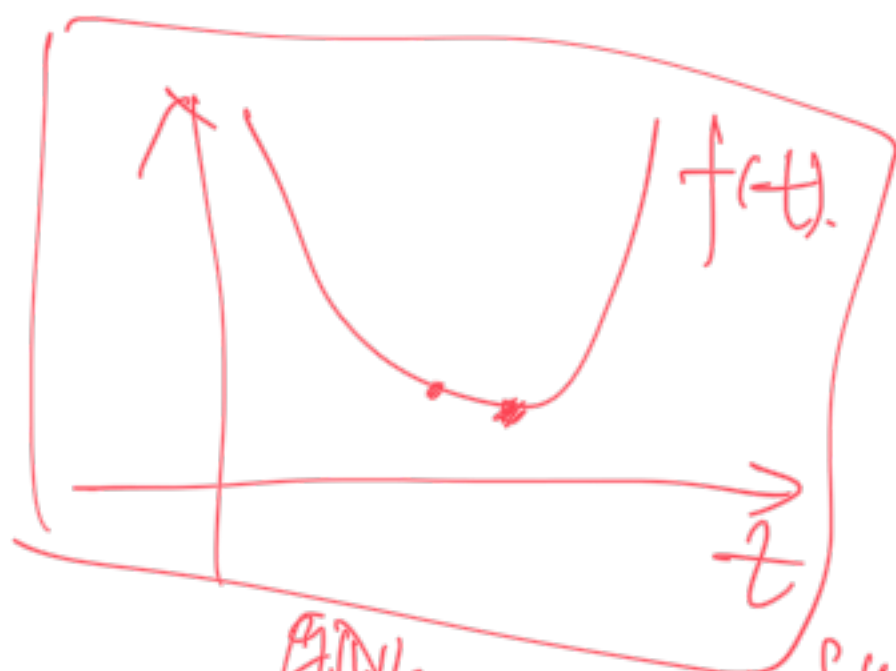


$$g = A \cdot f, \quad B = A^{-1} \quad \left\{ \begin{array}{l} \text{scaling} \\ \text{permutation} \end{array} \right.$$

$$B \cdot g = \underbrace{BA} f = f$$

$$BA \neq I.$$

$$= \underbrace{PA} f \rightarrow \begin{pmatrix} \lambda_1 & & 0 \\ & \lambda_2 & \\ 0 & & \lambda_3 \end{pmatrix}$$



$\Rightarrow l_0$

$\rightarrow l_1$  norm:  $\sum |l|$

easy

$\rightarrow l_p$  norm:  $\sqrt[p]{\sum |l|^p}$

difficult

$$\begin{pmatrix} f_1(1,1) \\ f_2(1,1) \\ f_3(1,1) \end{pmatrix}$$

$$\begin{bmatrix} g_1 & g_2 \end{bmatrix} = A \cdot$$

$$\begin{bmatrix} f_1 & f_2 \end{bmatrix} B$$

3 sources