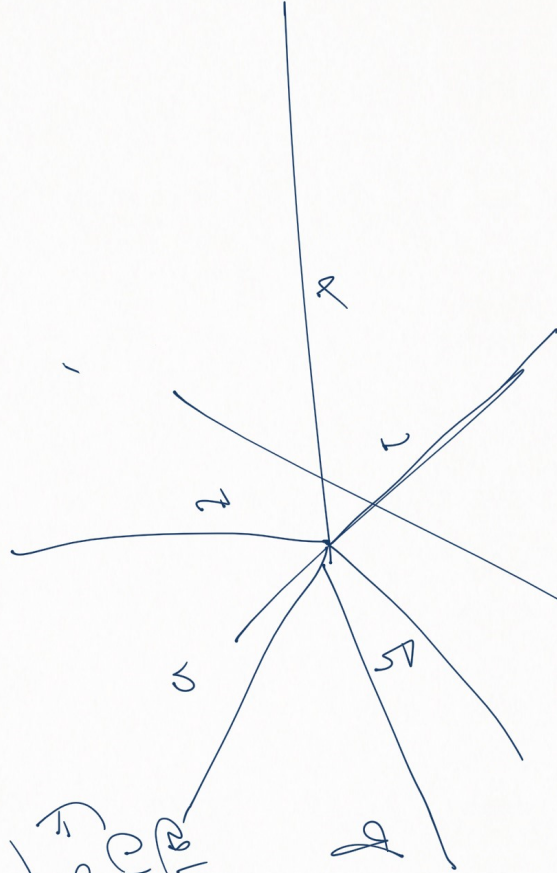


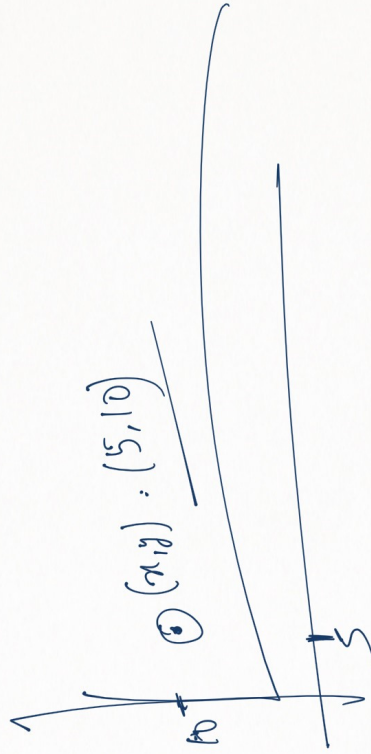
# Higher Dimensional Problem $\Rightarrow$

$P$ -Features,  $P=6 \Rightarrow$   
 $P=10$   
 $P=10$

$x_1, x_2, x_3, x_4, x_5$



$$\begin{pmatrix} x_1 \\ x_2 \end{pmatrix} \begin{pmatrix} x_1, x_2, x_3, x_4, x_5 \end{pmatrix} y \begin{pmatrix} x_1, x_2 \end{pmatrix}$$







## Factor Analysis

Tries to find out optimal factors.  
Uses linear method to solve this

## PCA

Tries to preserve most of the variation present in Input Data  
Principal Component Analysis

$$\frac{(100\%)}{95\%}$$

PCA  $\Rightarrow$

Tries to Divide features into  $k$  - components.

1st Component will have maximum variation.

2nd " " 2nd " "

$$\frac{K < N}{6}$$