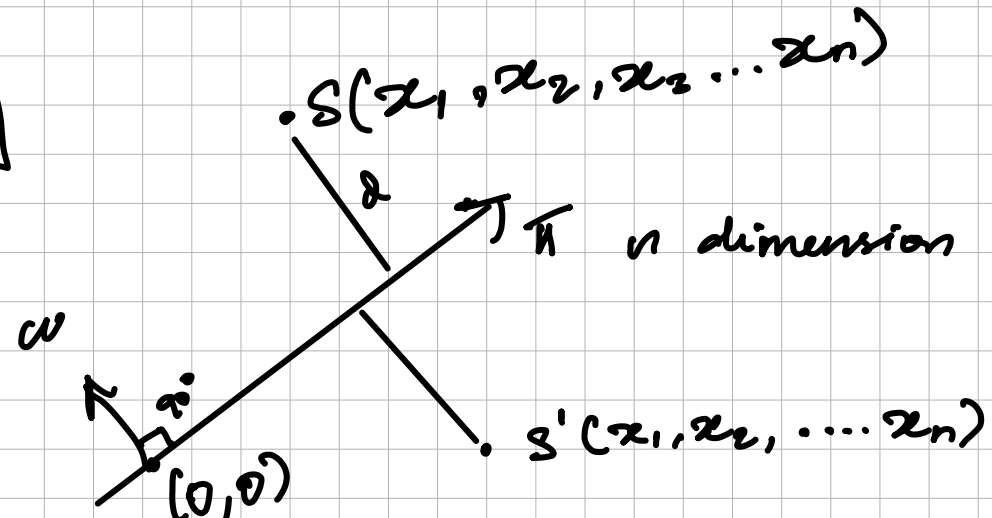
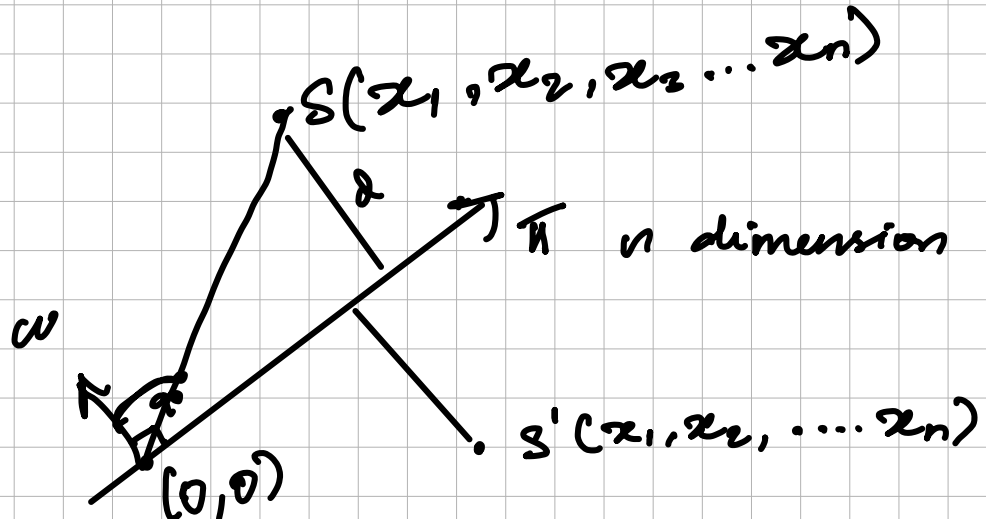
Distance of a point from a plane:

$w^T x = 0$



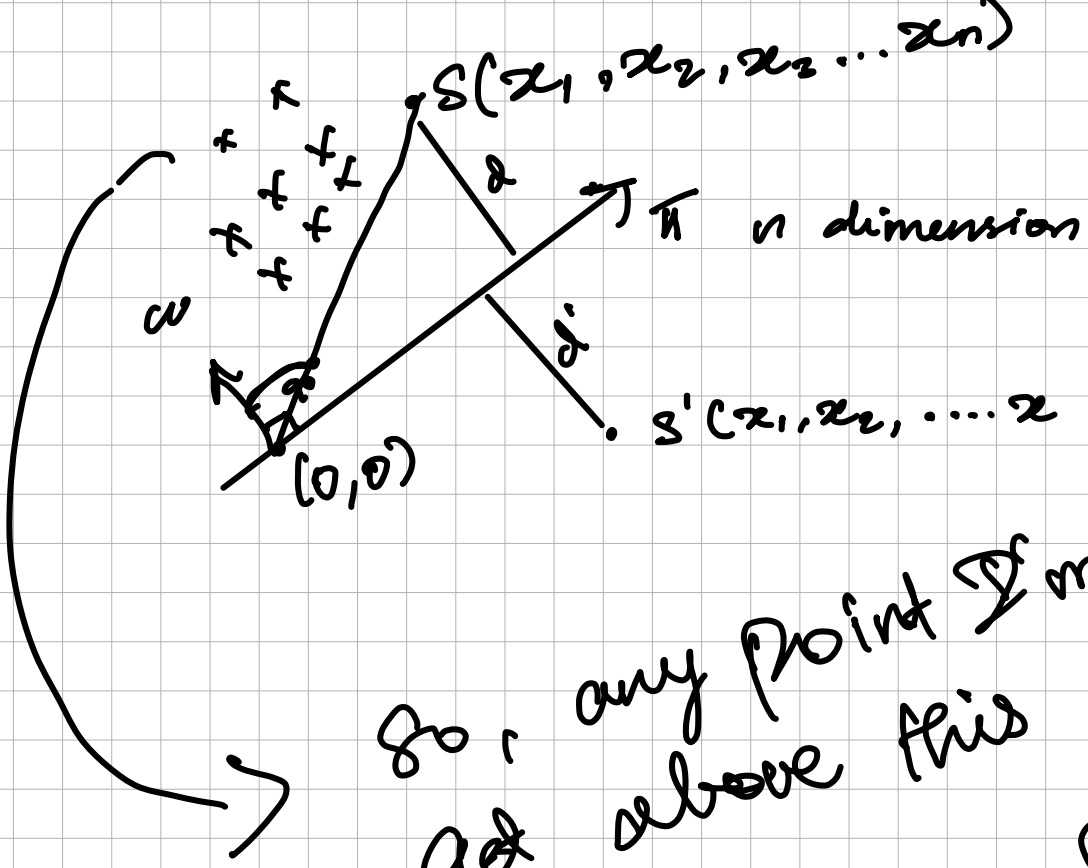
How can we calculate the distance between the points and the plane??

$$d = \frac{w^T S}{\|w\|} \Rightarrow w^T S = \|w\| \|s\| \cos\theta$$



$\Rightarrow w^T s = \|w\| \|s\| \cos\theta$

$\Rightarrow$ +ve at this angle.



$\Rightarrow$ So, any point S in gonna get above this angle its gonna be positive value.

$< 90^\circ \Rightarrow$ +ve Number.

$> 90^\circ \Rightarrow$ -ve Number.