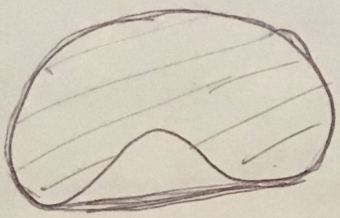
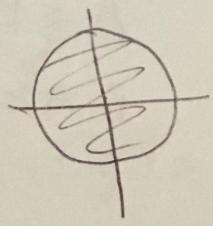
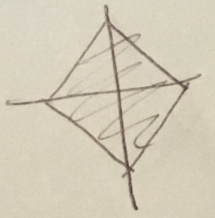
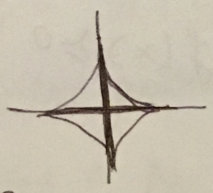
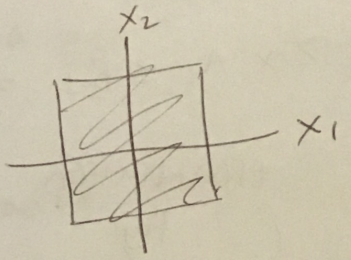








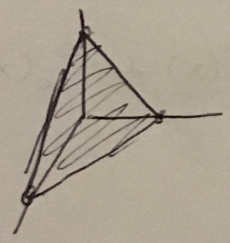


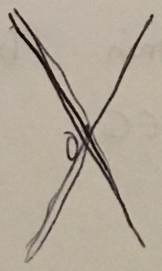
$$A = [a_1\ a_2 \cdots]$$

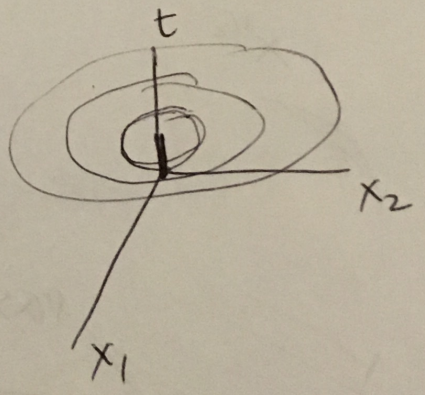
$$a_1^T x = b_1$$
$$a_2^T x = b_2$$

$a_1 x_1 + \cdots + a_k x_k = 0 \Rightarrow a_1 = 0 = a_2 = 0 \cdots a_k = 0$ linear ind

$x_2 - x_1, x_3 - x_1, \cdots x_k - x_1$ linear ind. $\Rightarrow x_1 - x_k$ affine ind.





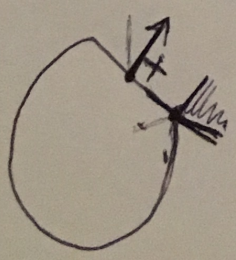


For any $x \in C$

$$\{g:\ g^T(y-x) \leq 0,\ \forall y \in C\}$$

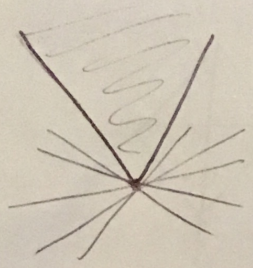
S	A
T	C

$$a^T b = \|a\| \|b\| \cos\theta \leq 0$$



$X \succeq 0 \quad \lambda_i(X) \geq 0 \ \forall i$

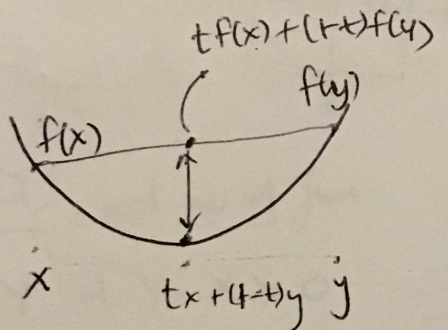
$a^T X a \geq 0$

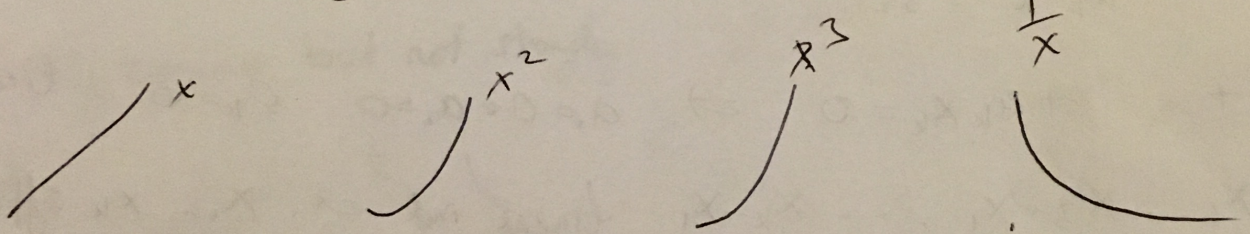


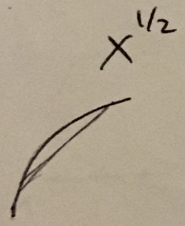
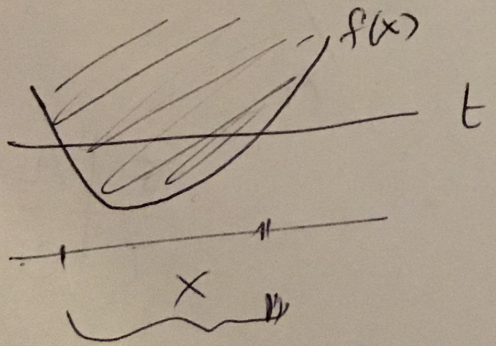
$A \preceq B$

$B - A \succeq 0$

$$\{x : \sum x_i A_i \preceq B\} = \{x : f(x) \succeq 0\} = f^{-1}(S_+^n)$$







$$\min_{x \in C} f(x) = \min f(x) + I_C(x)$$