

Antonio Carlos da Silva 2018019443

Lista 1. Otimização Não-linear

1.1)

a - $\forall x, g_i(x) < 0$

b - Some $g_i(x) > 0$ and other $g_j < 0$

c - $g_i(x) = 0$ and other $g_j(x) \leq 0$

d - Some $g_i(x) = 0$ and other $g_j(x) \geq 0$

e - $g_i(x) = 0$

1.2)

a - T, b - T, c - F, d - F, e - T

f - T, g - T, h - T.

1.5)

$\max f(x)$ is equivalent to $-\min(-f(x))$

1.8)

In linear problems all constraints are equations and objective function are linear, like straight line and plane surfaces. Different of the non-linear problems, where we have have quadratic, exponential equations and so on...

1.12)

Bound point are x^* values that belong to $g(x^*) = 0$, in other words, they are points belonging to a constraint line exactly from the set of points where $g(x^*)$ intersects the plane x in $g(x) - K = 0$. These points are all points where



all events $g_i(x) < 0$.