Machine Learning SS2013

Ulrike von Luxburg
Assignment 03

Arne Schröder   Falk Oswald   Angel Bakardzhiev

May 8, 2013

Exercise 1

Write the following linear program in the standard form by determining **A,b,c**
   Substitute x_3 with $x_3' = -x_3$.
minimize $x_1 - 2x_2 - 4x_3'$
subject to
$-x_1 + x_2 \geq 1$
$3x1 - 2x_3' \leq -1$
$-2x_1 + 5x_3' + 4 \leq 0$
and
$x_1, x_2, x_3' \leq 0$

Standard form:

minimize $c^T x$
subject to $Ax \leq b$
and $x \leq 0$
with $A = \begin{bmatrix} -1 & 1 & 0 \\ 3 & 0 & -2 \\ -2 & 0 & 5 \end{bmatrix}$ $b = \begin{bmatrix} 1 \\ -1 \\ 4 \end{bmatrix}$ $c = \begin{bmatrix} 1 \\ -2 \\ -4 \end{bmatrix}$