

Optimization, Written Assignment #4

May 2, 2008

All numbered exercises are from Boyd and Vandenberghe.

1. 5.12
2. 5.13
3. 5.19
4. 5.21 (a)-(c). You can think of the constraint on the domain as $f_1(x, y) = \frac{x^2}{y}$ if $y > 0$ and $f_1(x, y) = \infty$ if $y \leq 0$.
5. 5.22 (optional)
6. 5.23 (c). Note that this corrects something I might have said in class. A sufficient condition for LP Strong Duality is that either the primal is feasible or the dual is feasible. This example shows that if you mechanically take the dual, you might get an unfeasible primal and an unfeasible dual.
7. 5.24