Errors in the course book

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Theory

Chapter 3

1. Proof of Theorem 3.31: "$\mathbf{b}^0$ has a nonnegative entry $b_i^0 < 0$" should be changed to "$\mathbf{b}^0$ has a negative entry $b_i^0 < 0$".

2. Proof of Theorem 3.31: "In particular, there exists some vector $\boldsymbol{\pi} \geq 0^m$ such that the inequality $0 \leq b_i^0$ is identical to $\mathbf{x}^{\mathrm{T}}\mathbf{A}^{\mathrm{T}}\boldsymbol{\pi} \leq \mathbf{b}^{\mathrm{T}}\boldsymbol{\pi}$. That is, $\boldsymbol{\pi} \geq \mathbf{0}^m$, $\mathbf{A}^{\mathrm{T}}\boldsymbol{\pi} = \mathbf{0}^n$, $\mathbf{b}^{\mathrm{T}}\boldsymbol{\pi} = b_i^0 < 0$ is feasible." should be replaced by "From Fourier's elimination method there exists $\boldsymbol{\pi} \geq \mathbf{0}^m$ such that $\boldsymbol{A}^{\mathrm{T}}\boldsymbol{\pi} = \mathbf{0}^n$ and $\mathbf{b}^{\mathrm{T}}\boldsymbol{\pi} = b_i^0 < 0$ corresponding to the fact that the ith inequality in the system $\mathbf{0}^m \leq \mathbf{b}^0$ cannot be satisfied."

Chapter 4

0 isn't a feasible direction, should be changed in the following places:

- p. 88: formula 4.5 and the third formula
- p. 95: line 6 and Def 4.19
- p. 96: Ex 4.21

Chapter 5

0 isn't a feasible direction, should be changed in the following places:

- p. 129: Def 5.1
- p. 131: Ex 5.6

Chapter 12

p. 323: In Step 1, "p_k is a feasible direction" should be "p_k is a feasible descent direction".

Exercises

Chapter 1

- Exercise 1.3, p. 444 (solutions)
  - Equation 15.5: $t_{1,k}$ should be $t_{i,1}$.
  - Equation 15.6: $t_{2,k}$ should be $t_{i,2}$.
  - Equation 15.9: $b - y_i \geq$ z should be $b - y_i \leq$ z.

Chapter 3

- Exercise 3.4, p. 402
  - The point in b) should be $x^2 = \frac{1}{2}(3, 1)$.
- Exercise 3.4, p. 447 (solutions)
  - The axes are wrong, the horizontal axes should be x_1, and the vertical axes should be x_2.

Chapter 4

- Exercise 4.1, p. 406

  a) It should be $0 < x \leq 1$.
- Exercise 4.1, p. 449 (solutions)

  d) Discontinuous should be replaced with not lower semi-continuous
- Exercise 4.4, p. 449 (solutions)
  - **0** isn't a feasible direction.
- Exercise 4.11, p. 409
  - **0** isn't a feasible direction.

Chapter 6

- Exercise 6.1, p. 455 (solutions)

  a) $x_2 = \frac{2}{\sqrt{\mu}}$, not $x_2 = \frac{4}{\sqrt{\mu}}$.
- Exercise 6.4, p. 455 (solutions)
  - $x^* = (\frac{4}{2}, \frac{2}{3})$ should be $x^* = (\frac{4}{3}, \frac{2}{3})$, $f^* = \frac{22}{9}$ should be $f^* = \frac{8}{3}$.

Chapter 10

- Exercise 10.13, p. 463 (solutions)
  - $c_4 \leq 8$, not $c_4 \geq 8$