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p. 3 (+22) Change “as the union of the closures of all line segments” to “as the closure of the union of all line segments”

p. 37 (-2) Change “Every $x$” to “Every $x \neq 0$”

p. 38 (+1) Change “Every $x$ in” to “Every $x \notin X$ that belongs to”

p. 38 (+19) Change “i.e.,” to “with $x_1, \ldots, x_m \in \mathbb{R}^n$ and $m \geq 2$, i.e.,”

p. 51 (-10) Change “since $x \in C$ and $y \in RC.$” to “by our choice of $x$ and $y$.”

p. 63 (+4, +6, +7, +19) Change four times “$c'\bar{y}$” to “$a'\bar{y}$”

p. 67 (+3 after the figure caption) Change “$y \in AC” to “$\bar{y} \in AC”

p. 70 (+9) Change “[BeN02]” to “[NeB02]”

p. 71 (-12) Change “$C \times \cdots \times C$” to “$C$”

p. 80 (+7) Change “$C \cap M$” to “$cl(C) \cap M$”

p. 84 (+9) Change “$x \in X$” to “$x \in X \cap \text{dom}(f)$”

p. 84 (-7) Change “that the set of minima of $f$ over $X$” to “that for a feasible problem, the set of minima of $f$ over $X$”

p. 85 (-14) Change “Prop. 1.2.2(b)” to “Prop. 1.2.2(ii)”

p. 85 (-10) Change “Prop. 1.2.2(c)” to “Prop. 1.2.2(iii)”

p. 86 (-13) Change “$x^* \in X$” to “$x^* \in X \cap \text{dom}(f)$”

p. 93 (+14) Change “$x \in RV_{\gamma}$” to “$x \in V_{\gamma}$”

p. 93 (-15) Change “$(0, y) \in R_{\text{epi}(f)}$” to “$(y, 0) \in R_{\text{epi}(f)}$”

p. 110 (+3 after the figure caption) Change “... does not belong to the interior of $C$” to “... does not belong to the interior of $C$ and hence does not belong to the interior of $cl(C)$ [cf. Prop. 1.4.3(b)]”

p. 116 (+16) Change “$x = 0$” to “$x - \bar{x} = 0$”

p. 118 (+13) Change “proper” to “proper convex”

p. 128 (+10) Change “Prop. 1.5.5” to “Prop. 1.5.4”

p. 148 (-8) Change “$\{x \mid r(x) \leq \gamma\}$” to “$\{z \mid r(z) \leq \gamma\}$”

p. 153 (-8) Part (a) Exercise 2.1 is trivial as stated and does not require the convexity assumption on $f$. Here is a corrected version and corresponding
solution of part (a):

(a) Consider a vector \( x^\ast \) such that \( f \) is convex over a sphere centered at \( x^\ast \). Show that \( x^\ast \) is a local minimum of \( f \) if and only if it is a local minimum of \( f \) along every line passing through \( x^\ast \) [i.e., for all \( d \in \mathbb{R}^n \), the function \( g : \mathbb{R} \mapsto \mathbb{R} \), defined by \( g(\alpha) = f(x^\ast + \alpha d) \), has \( \alpha^\ast = 0 \) as its local minimum].

Solution: (a) If \( x^\ast \) is a local minimum of \( f \), evidently it is also a local minimum of \( f \) along any line passing through \( x^\ast \). Conversely, let \( x^\ast \) be a local minimum of \( f \) along any line passing through \( x^\ast \). Assume, to arrive at a contradiction, that \( x^\ast \) is not a local minimum of \( f \) and that we have \( f(\overline{x}) < f(x^\ast) \) for some \( \overline{x} \) in the sphere centered at \( x^\ast \) within which \( f \) is assumed convex. Then, by convexity, for all \( \alpha \in (0, 1) \),

\[
f(\alpha x^\ast + (1 - \alpha)\overline{x}) \leq \alpha f(x^\ast) + (1 - \alpha)f(\overline{x}) < f(x^\ast),
\]

so \( f \) decreases monotonically along the line segment connecting \( x^\ast \) and \( \overline{x} \). This contradicts the hypothesis that \( x^\ast \) is a local minimum of \( f \) along any line passing through \( x^\ast \).

p. 157 (-11 and -3) Change “nondecreasing” to “nonincreasing”

p. 213 (-6) Change “remaining vectors \( v_j, j \neq i \)” to “vectors \( v_j \) with \( v_j \neq v_i, j \neq i \)”

p. 219 (+3) Change “\( f_i : C \mapsto \mathbb{R} \)” to “\( f_i : \mathbb{R}^n \mapsto \mathbb{R} \)”

p. 262 (+5) Change the equation to

\[
g'(f(x); w) = \lim_{\alpha \downarrow 0, z \to w} \frac{g(f(x) + \alpha z) - g(f(x))}{\alpha}.
\]

p. 265 (+10) Change “\( d/\|d\| \)” to “\( -d/\|d\| \)”

p. 268 (-3) Change “\( j \in A(x^\ast) \)” to “\( j \notin A(x^\ast) \)”

p. 338 (+16) Change “convex, possibly nonsmooth functions” to “smooth functions, and convex (possibly nonsmooth) functions”

p. 382 In Sections 6.5.3 and 6.5.4, a distinction is made between the interior and the relative interior of \( \operatorname{dom}(p) \). However, this distinction is valid only for the primal function of a problem with equality and inequality constraints. For a problem with inequality constraints only, the interior and the relative interior of \( \operatorname{dom}(p) \) coincide, since \( \operatorname{dom}(p) \) contains the positive orthant.

p. 384 (+6) Change “Section 5.2” to “Section 5.3”

p. 435 (-3) Change “... \( f_1 \) and \( -f_2 \) are proper and convex, ...” to “... \( f_1 \) and \( -f_2 \) are proper and convex, and \( -f_2 \) is also closed, ...”
p. 446 (+6 and +8) Interchange “... constrained problem (7.16)” and “... penalized problem (7.19)”

p. 458 (+13) Change “… as well real-valued” to “… as well as real-valued”

p. 458 (-10) Change “We will focus on this ... dual functions.” to “In this case, the dual problem can be solved using gradient-like algorithms for differentiable optimization (see e.g., Bertsekas [Ber99a]).”

p. 466 (+6) Change “\(y_i \subset \mathbb{R}^m\)” to “\(y_i \in \mathbb{R}^m\)”