

Errata (comments; fix-up of typos and errors) to

Krzysztof Ciesielski, *Set Theory for the Working Mathematician*,
 London Math Society Student Texts **39**, Cambridge University Press, 1997.

(n^i means page n line i from the top; n_i means page n line i from the bottom.)

7¹ – “distinguish” should be “distinguished.”

p. 43, Ex. 7 – Solution to this exercise requires Theorem 4.3.2, from latter Section 4.3.

62⁷ – Displayed statement requires explanation something like:

Indeed, if f is a bijection between β and $|\beta|$ then $f \upharpoonright \alpha$ is a bijection between α and $f[\alpha]$. So $\alpha \approx f[\alpha] \approx \text{Otp}(f[\alpha])$ and so $|\alpha| = |f[\alpha]| = |\text{Otp}(f[\alpha])| \leq \text{Otp}(f[\alpha]) \leq |\beta|$, where the last inequality follows from Corollary 4.2.6 as $f[\alpha] \subset |\beta|$.

67₇₋₁₂ – The comment “In fact, . . . of choice” is false! Remove it all together.

95₄₋₉ – The proof of $\Sigma_\beta^0 \subset \Sigma_\alpha^0$ and $\Pi_\beta^0 \subset \Pi_\alpha^0$ does not use induction.

p. 97, Ex. 5 – Remove it. Requires more involved technique.

p. 110, Ex. 1 – May be too easy: if h is a function from Ex. 1 Sec. 7.1 and f is as in the exercise then $g = [h \upharpoonright (\mathbb{R} \setminus C)] \cup f$ is as required.

p. 111, Ex. 4 – Too easy. Just take $X = \mathbb{R} \setminus \mathbb{Q}$ and Y – the Cantor set.

p. 111, Ex. 5 – Replace “for every continuous function $g: \mathbb{R} \rightarrow \mathbb{R}$ the set $\{x \in \mathbb{R}: f(x) = g(x)\}$ has cardinality less than \mathfrak{c} ” with “ $f \upharpoonright X$ is discontinuous for every $X \in [\mathbb{R}]^{\mathfrak{c}}$.”

p. 154, Ex. 6 and 7 – Both statements are false. In each of these exercises replace “Show that for every family \mathcal{A} of countable subsets of κ such that $|\mathcal{A}| < \mathfrak{c}$ ” with

Let \mathcal{A} be a family of countable subsets of κ such that the set $\{A \in \mathcal{A}: |A \cap C| = \omega\}$ is at most countable for every countable set C . Show that if $|\mathcal{A}| < \mathfrak{c}$ then

165₁₃ – Replace “ $\min\{\beta: y \in R(\beta + 1)\}$ ” with “ $\min\{\beta: y \in R(\beta)\}$.”

179₆ – Replace “ $F(x) = \{y \in Y: \exists p^y \in \mathbb{P} (\widehat{\langle\langle x, y \rangle, p^y \rangle} \in \tau)\}$ ” with “ $F(x) = \{y \in Y: \exists p^y \in \mathbb{P} \text{ compatible with } p_0 \text{ such that } \widehat{\langle\langle x, y \rangle, p^y \rangle} \in \tau\}$.”

179₂ – Replace “then $p = p^y \leq p_0$ ” with “then there exists a p extending p^y and p_0 .”