

Errata to *Linear Models and Design*

Page 221: In the first paragraph of Sec. 6.1, Example 6.2 uses $s = 3$, not $s = 2$.

Page 225, footnote 2: The reference should be to page 36 of [98].

Pages 234, 236 (top): The term “defining equation” (to apply to expressions like $I = AB^2$) should be “defining relation”, as in Example 6.21 (p. 236) and in many other sources. The term “defining equation” would apply to equations like $a_1t_1 + a_2t_2 = b$ that define a fraction.

Pages 256–8 and 284: There are several changes:

- Theorem 6.51 should be corrected to read:

If a simple fraction has maximum strength $t \geq 1$ and maximum resolution R , then $R = t + 1$.

The proof of Theorem 6.51 stays exactly as is. Correcting the theorem itself involves a couple of other changes:

- Theorem 6.52, which establishes $R = t + 1$ for regular fractions, is unnecessary and should be eliminated, along with the sentence before it and the four after it.
- The proof of Theorem 6.52 (page 284) is no longer relevant. It can be retained if it is relabeled *Proof of Theorem 6.51 for regular fractions*. Similarly, Remark 6.38 (immediately following) should be rephrased to say “this result” instead of “Theorem 6.52”.

(Theorem 6.51 is currently formulated as an implication, but its proof turns it into a double-implication. The claim (page 258) that we need to prove a converse is thus false. In fact, rather than implications, what we have instead is a pair of inequalities: $R \geq t + 1$ [Proposition 6.50] and $R \leq t + 1$ [established by the proof of Theorem 6.51]. Thanks to Jesse Beder for pointing this out.)

Page 285 top: There are two problems: First, it is Corollary 6.81, not 6.26, that is being referred to. Second, the observation that its proof hasn’t appeared in the published literature is not quite true: Part (a) is Theorem 9.4 in [1], a proof of which is given there. (I would still like to know about any prior proof of part (b).)

Index, page 342: In the entry “Sum of squares”, the sub-entry “uncorrected (*see* Corrected)” should say “uncorrected (*see* corrected for the mean)”. There is no entry for “Corrected”.

References

- [1] Ching-Shui Cheng. *Theory of Factorial Design: Single- and Mult-Stratum Experiments*. CRC Press, Boca Raton, FL, 2014.