Errata for ‘Recurrence Sequences’
by Everest, van der Poorten, Shparlinski and Ward.

The authors reiterate their thanks to the many people who sent in comments on early drafts of the book, and add to their number Stefan Gerhold, Christophe Reutenauer, Andrzej Schinzel, Joe Silverman, Neil Sloane, Michael Somos, Katherine Stange for the corrections and additional comments here.

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page 26. 3rd line of Section 2.2: replace ‘solution of’ with ‘solutions of’

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page 28. The second displayed equation of Section 2.2.2 should read

$$f_n(X) = \frac{X^{n+1} + (-2)^{n-1}X + (-2)^n}{X + 2}.$$

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page 34. The inequality in Theorem 2.5 should read

$$\max_{0\le i\le n-1} \frac{|a(x_i)|}{|\alpha_1|^{x_i} x_i^{-n}} > 1$$

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page 70. We are grateful to Christophe Reutenauer for the following correction. The result on Hadamard inversion, characterizing those linear recurrence sequences $(a(x))$ with the property that $(1/a(x))$ is also a linear recurrence result, was shown by Benzaghou in 1970 using complex analysis in the paper

Benali Benzaghou, Algèbres de Hadamard, *Bull. Soc. Math. France* **98**, 209–252 (1970).

An algebraic proof, extending the result to any characteristic, was given by Reutenauer in the paper

Christophe Reutenauer, Sur les éléments inversibles de l’algèbre de Hadamard des séries rationnelles, *Bull. Soc. Math. France* **110**, 225–232 (1982).

This argument may also be found in the chapter on recurrence sequences in the monograph

Jean Berstel, Christophe Reutenauer, *Rational series and their languages*. EATCS Monographs on Theoretical Computer Science, **12**. Springer-Verlag, Berlin (1988).

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page 70. We are grateful to Katherine Stange for pointing out a serious error at the bottom of page 70. The words “in which case

$$\gcd\left(a(x), a(y)\right) = a_{\gcd(x,y)}\text{”}$$

should be omitted. There are many divisibility sequences without this property of course.

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page 95, line 1; page 172, line -7; page 173, line 3; page 315, line -3. Replace 'Merten's Theorem' with 'Mertens' Theorem'.

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page 97, line 17: replace 'addition' with 'additional'

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page 101, line -5: replace 'for almost α' with 'for almost all α'

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page 107–8. Theorem 6.9 should read as follows. Let α_{ij}, β_i, $i = 1, \dots, m$, $j = 1, \dots, n$ be elements of an algebraic number field $\mathbb{K}$. Assume that for at least one $k \le m$ the numbers $\alpha_{k1}, \dots, \alpha_{kn}$ are linearly independent. Then if the system of congruences

$$\prod_{j=1}^{n} \alpha_{ij}^{x_j} \equiv \beta_i \bmod \mathfrak{p}, \qquad i = 1, \dots, m,$$

is solvable for almost all prime ideals $\mathfrak{p}$ of $\mathbb{K}$, the system of equations

$$\prod_{j=1}^{n} \alpha_{ij}^{x_j} = \beta_i, \qquad i = 1, \dots, m,$$

is solvable in integers.

(The powers x_j were missing).

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page 127, start of Section 8.1. It is not necessary to take the fractional part in the definition of the set A, since the sequence is assumed to lie in the unit cube.

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page 149, line 5. Replace 'there no zeros' with 'there are no zeros'

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page 166, discussion near bottom of the page. An example is given of an elliptic curve with non-torsion point $Q = (0, 0)$ which does not give rise to an elliptic divisibility sequence. A more accurate impression is given by noting that it does, after one takes account of some cancellation between numerator and denominator. Indeed, it is the elliptic divisibility sequence

$$0, 1, 1, 3, 1, -26, -81, -703, -1405, 52647, \dots,$$

corresponding to $a_1 = a_2 = a_4 = 1$ and $a_3 = 3$; apart from a repeating pattern of period 24 which divides the terms, these provide the (squares and cubes of) denominators of the multiples of the point Q. We are grateful to Michael Somos for pointing this out.

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page 222, line 24. Second [**767**] should be [**768**].

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page 255: all the entries are correct, but some are in the wrong order or repeated. This is fixed in the linked page.

Please e-mail further corrections to `t.ward@uea.ac.uk`.