MATHEMATICS OF COMPUTATION
Volume 77, Number 263, July 2008, Page 1869
S 0025-5718(07)02077-7
Article electronically published on October 29, 2007

CORRIGENDUM TO "THE MONIC INTEGER TRANSFINITE DIAMETER"

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It has been pointed out by Jan Hilmar [2] that the polynomial given in Table 5 of [1], $t_{\mathrm{M}}(b) = \frac{1}{3}$, regrettably does not have the property we claimed for it. The appearance of this polynomial was a computational oversight, and not caused by any failure of our algorithm for finding the polyomial. It should be replaced by

$$P(x) = x^{45944640}(x^5 - 3x^4 + 7x^3 - 11x^2 + 6x - 1)^{1052898}$$
$$(x^7 - 1233x^6 + 2406x^5 - 1913x^4 + 791x^3 - 179x^2 + 21x - 1)^{1210840}$$
$$(x^8 + 14184x^7 - 34944x^6 + 36442x^5 - 20832x^4 + 7041x^3 - 1405x^2 + 153x - 7)^{877415}$$
$$(x^8 + 4842x^7 - 10935x^6 + 10355x^5 - 5317x^4 + 1594x^3 - 278x^2 + 26x - 1)^{2571030}$$
$$(x^8 + 7812x^7 - 18072x^6 + 17561x^5 - 9271x^4 + 2864x^3 - 516x^2 + 50x - 2)^{595980}$$
$$(x^{14} - 11406261x^{13} + 47054086x^{12} - 88456310x^{11} + 100247244x^{10} - 76341256x^9$$
$$+41208853x^8 - 16202606x^7 + 4692047x^6 - 999261x^5$$
$$+154318x^4 - 16766x^3 + 1211x^2 - 52x + 1)^{2450525}.$$

This new polynomial, of degree 126347760, has a maximum of $\left(\frac{1}{3}\right)^{126347760}$ at $x = \frac{1}{3}$ on the interval $[0, 0.465]$, showing that this interval has monic integer transfinite diameter $\frac{1}{3}$.

We also note that in [2] Hilmar has disproved Conjectures 1 and 2 of [1].

References

[1] K.G. Hare and C.J. Smyth, *The monic integer transfinite diameter*, Math. Comp. 75 (2006), 1997–2019. MR2240646 (2007h:11037)

[2] Jan Hilmar, *Consequences of the continuity of the monic transfinite diameter*, in Number theory and polynomials (Conference proceedings, University of Bristol, 3-7 April 2006, editors James McKee and Chris Smyth). LMS Lecture notes (to appear).

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Received by the editor May 29, 2007.

2000 *Mathematics Subject Classification.* Primary 11C08; Secondary 30C10.

Key words and phrases. Chebyshev polynomials, monic integer transfinite diameter.