DOI: 10.3842/umzh.v76i9.8063

CORRECTION TO THE B. CHAKRABORTY'S ARTICLE "ON THE CARDINALITY OF A REDUCED UNIQUE RANGE SET" [Ukr. Mat. Zh., 72, № 11, 1553 – 1563 (2020)]

ВИПРАВЛЕННЯ ДО СТАТТІ Б. ЧАКРАБОРТІ „ПРО КАРДИНАЛЬНІСТЬ ЗВЕДЕНОЇ УНІКАЛЬНОЇ ДІАПАЗОННОЇ МНОЖИНИ" [Укр. мат. журн., 72, № 11, 1553 – 1563 (2020)]

Let $M(\mathbb{C})$ denote the field of all meromorphic functions in $\mathbb{C}$. We define $M^*(\mathbb{C}) = \{f \in M(\mathbb{C})\colon N(r,\infty; f \mid = 1) = S(r,f)\}$.

For a positive integers $n(\geq 3)$ and a complex number $c(\neq 0,1)$, we shall denote by $P(z)$ [1] the following polynomial:

$$P(z) = \frac{(n-1)(n-2)}{2} z^n - n(n-2)z^{n-1} + \frac{n(n-1)}{2} z^{n-2} - c. \tag{1}$$

The statement of Theorem 2.1 on p. 1555 of [2] should be the following.

Theorem 2.1. *Let $S = \{z\colon P(z) = 0\}$, where $P(z)$ is the polynomial of degree n, defined in* (1). *Let $f, g \in M^*(\mathbb{C})$. If f and g share S IM and $n \geq 15$, and then $f \equiv g$.*

In p. 1563, the calculations should be as follows:

$$\begin{aligned}
&\left(\frac{n}{2} - 3\right)(T(r,f) + T(r,g)) \\
&\qquad \leq 2\big\{\overline{N}(r,\infty; f) + \overline{N}(r,\infty; g)\big\} + 2N(r,0; f'|f \neq 0) \\
&\qquad\qquad + 2N(r,0; g'|g \neq 0) + S(r,f) + S(r,g) \\
&\qquad \leq 2\big\{\overline{N}(r,\infty; f) + \overline{N}(r,\infty; g)\big\} + 2N\left(r,0; \frac{f'}{f}\right) + 2N\left(r,0; \frac{g'}{g}\right) + S(r,f) + S(r,g) \\
&\qquad \leq 4\big\{\overline{N}(r,\infty; f) + \overline{N}(r,\infty; g)\big\} + 2T(r,f) + 2T(r,g) + S(r,f) + S(r,g) \\
&\qquad \leq 4\big\{\overline{N}(r,\infty; f| \geq 2) + \overline{N}(r,\infty; g| \geq 2)\big\} + 2T(r,f) + 2T(r,g) + S(r,f) + S(r,g) \\
&\qquad \leq 2\big\{N(r,\infty; f) + N(r,\infty; g)\big\} + 2T(r,f) + 2T(r,g) + S(r,f) + S(r,g),
\end{aligned}$$

that is,

$$(n-10)(T(r,f) + T(r,g)) \leq 4\{N(r,\infty; f) + N(r,\infty; g)\} + S(r,f) + S(r,g), \tag{2}$$

which is impossible as $n \geq 15$ (resp., 11) and $f, g \in M^*(\mathbb{C})$ (resp., $f, g \in H(\mathbb{C})$).

The statement of Remark 2.1 on page 1555 of [2] should be the following.

***Remark* 2.1.** Let $S = \{z\colon P(z) = 0\}$, where $P(z)$ is the polynomial of degree n, defined in (1). If $n \geq 11$, then S is a URSE-IM.

References

1. G. Frank, M.Reinders, *A unique range set for meromorphic function with* 11 *elements*, Complex Var. Theory Appl., **37**, 185 – 193 (1998).
2. B. Chakraborty, *On the cardinality of a reduced unique-range set*, Reprint of Ukr. Mat. Zh., **72**, № 11, 1553 – 1563 (2020); ***English translation:*** Ukr. Math. J., **72**, № 11, 1794 – 1806 (2021).