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GENERALIZATION OF AN INEQUALITY FOR NONDECREASING SEQUENCES

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In 1981, A. Meir [**4**] proved the following theorem for nondecreasing sequences:

Theorem A. *Let* $a_0, a_1, \dots, a_{n-1}$ *and* $p_1, p_2, \dots, p_n$ *be nonnegative real numbers satisfying*

$$0 = a_0 \le a_1 \le a_2 \le \cdots \le a_{n-1},$$
$$a_i - a_{i-1} \le p_i, \quad i = 1, \dots, n-1,$$

and

$$(1) \qquad p_1 \le p_2 \le \cdots \le p_n.$$

If r *and* s *are real numbers with* $r \ge 1$ *and* $s \ge 2r+1$, *then*

$$(2) \quad \left[(s+1)\sum_{i=1}^{n-1} a_i^s \frac{p_i + p_{i+1}}{2}\right]^{1/(s+1)} \le \left[(r+1)\sum_{i=1}^{n-1} a_i^r \frac{p_i + p_{i+1}}{2}\right]^{1/(r+1)}.$$

In 1986, G.V. Milovanović and I.Ž. Milovanović [**5**] presented an interesting refinement of Theorem A. Their result states:

Theorem B. *If the numbers* a_i, $i = 0, 1, \dots, n-1$, p_i, $i = 1, 2, \dots, n$,

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