

SOCIETATEA DE ȘTIINȚE MATEMATICE DIN ROMÂNIA
ROMANIAN MATHEMATICAL SOCIETY



Filiala Mehedinți - Mehedinți Branch
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$$a + b + c + d \leq \frac{a^5 + b^5 + c^5 + d^5}{abcd}$$

$$(a, b, c, d > 0)$$

Proposed by Daniel Sitaru – Romania

Solution by Kunihiro Chikaya – Tokyo – Japan

$$\frac{a^5 + a^5 + b^5 + c^5 + d^5}{5} \geq \sqrt[5]{a^5 a^5 b^5 c^5 d^5} = a^2 b c d$$

$$\frac{a^5 + b^5 + b^5 + c^5 + d^5}{5} \geq \sqrt[5]{a^5 b^5 b^5 c^5 d^5} = a b^2 c d$$

$$\frac{a^5 + b^5 + c^5 + c^5 + d^5}{5} \geq \sqrt[5]{a^5 b^5 c^5 c^5 d^5} = a b c^2 d$$

$$\frac{a^5 + b^5 + c^5 + d^5 + d^5}{5} \geq \sqrt[5]{a^5 b^5 c^5 d^5 d^5} = a b c d^2$$

$$\oplus \frac{5(a^5 + b^5 + c^5 + d^5)}{5} \geq abcd(a + b + c + d)$$