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This month's "free sample" is:

**3982.** *Proposed by Michel Bataille.*

Let  $n \in \mathbb{N}$ ,  $u > 0$  and for  $k = 0, 1, \dots, n-1$ , let  $a_k$  be such that  $0 < a_k \leq \sinh(u)$ .  
Prove that if  $x \geq e^u$ , then

$$a_{n-1}x^{n-1} - a_{n-2}x^{n-2} + \dots + (-1)^{n-2}a_1x + (-1)^{n-1}a_0 < \frac{x^n}{2}.$$

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**3982.** *Proposé par Michel Bataille.*

Soit  $n \in \mathbb{N}$  et  $u > 0$ . Pour  $k = 0, 1, \dots, n-1$ , soit  $a_k$  tel que  $0 < a_k \leq \sinh(u)$ .  
Démontrer que si  $x \geq e^u$ , alors

$$a_{n-1}x^{n-1} - a_{n-2}x^{n-2} + \dots + (-1)^{n-2}a_1x + (-1)^{n-1}a_0 < \frac{x^n}{2}.$$

