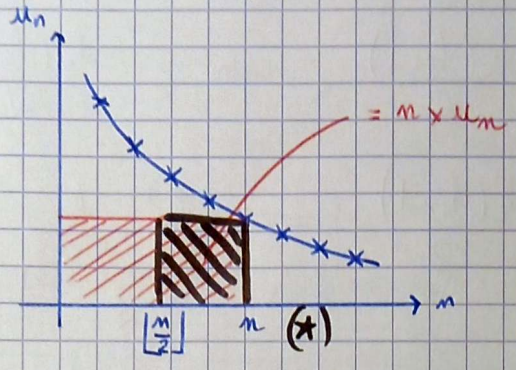
Exercice 74 (Nicolas)



On a : $0 \leqslant n u_n \leqslant \sum u_n$

(★) $\left(n - \left\lfloor \frac{n}{2} \right\rfloor\right) u_n \leqslant \sum_{\lfloor \frac{n}{2} \rfloor}^{n} u_k = A_n$

$\forall k \in \left[\!\left[\lfloor \frac{n}{2} \rfloor, n \right]\!\right]$, $u_k \geqslant u_n$

A_n est une somme de $\left(-\lfloor \frac{n}{2} \rfloor + n + 1\right)$ termes $\geqslant u_n$

$$A_n \geqslant \frac{n}{2} u_n \geqslant 0$$

$$\| $$

$$S_n - S_{\lfloor \frac{n}{2} \rfloor} \xrightarrow[n \to +\infty]{} S - S = 0$$