CC40A: Diseño y Análisis de Algoritmos
Auxiliar N^{o} 2

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1. Resolver las siguiente recurrencias [lineales homogéneas]:
   - $u_0 = 0$, $u_1 = 1$, $u_n = 5u_{n-1} - 6u_{n-2}$ $(n \geq 2)$.
   - $u_0 = 1$, $u_1 = 0$, $u_n = 6u_{n-1} - 8u_{n-2}$ $(n \geq 2)$.
   - $u_0 = 0$, $u_1 = 1$, $u_2 = 3$, $u_n - u_{n-1} = 4[(u_{n-1} - u_{n-2}) - (u_{n-2} - u_{n-3})]$ $(n \geq 3)$.
   - $u_0 = 1$, $u_1 = 2$, $u_2 = 3$, $u_n = 5u_{n-1} - 8u_{n-2} + 4u_{n-3}$ $(n \geq 3)$.
2. Resolver las siguiente recurrencias [teorema maestro]:
   - $T(n) = 2T(n/2) + n^3$.
   - $T(n) = 5T(n/2) + \Theta(n^2)$.
   - $T(n) = 5T(n/2) + \Theta(n^3)$.
   - $T(n) = 27T(n/3) + \Theta(n^3 \lg n)$.
   - $T(n) = T(9n/10) + n$.
   - $T(n) = 16T(n/4) + n^2$.
   - $T(n) = 7T(n/3) + n^2$.
   - $T(n) = 7T(n/2) + n^2$.
   - $T(n) = 2T(n/4) + \sqrt{n}$.
   - $T(n) = T(\sqrt{n}) + 1$.
3. Disk Piles.