6 Encontrar la posicion $n = 1874$ de la ecuación encontrada

$a_n = 2a_{n-1} - a_{n-2}, \quad n \geq 2$

$a_0 = 4, \quad a_1 = 1$

$a_n - 2a_{n-1} + a_{n-2} = 0$

$x^2 - 2x + 1 = 0$

$(x-1)(x-1)$

$r_1 = 1$
$r_2 = 1$

$a_n = k_1 r_1^n + k_2 n r_1^n$

$4 = k_1 (1)^0 + k_2 (4)(1)^0 \rightarrow \quad a_n = k_1 + k_2 \times n$

$4 = k_1 + k_2 \times 0$

$k_1 = 4$

$1 = k_1 (1)^1 + k_2 (1)(1)^1$

$1 = k_1 + k_2 (n)$

$1 = 4 + k_2$

$\boxed{k_2 = -3}$

$a_{1874} = 4 + (-3) \cdot 1874$

$a_{1874} = 4 - 5637$

$a_{1874} = -5633$