

## Ejercicios sobre Ecuaciones en Diferencias Finitas

Resuelve las siguientes ecuaciones en diferencias:

1.  $a_{n+2} - 3a_{n+1} - 4a_n = 0, n \geq 0, a_0 = 1, a_1 = 2.$

2.  $a_{n+2} - 2a_{n+1} + a_n = 0, n \geq 0, a_0 = 1, a_1 = 1.$

3.  $a_{n+2} - a_n = n^2, n \geq 0, a_0 = 2, a_1 = 0.$

4.  $a_{n+2} - 6a_{n+1} + 9a_n = 3 \cdot 2^n, n \geq 0.$

5.  $a_{n+2} + 4a_{n+1} + 4a_n = 7, n \geq 0, a_0 = 1, a_1 = 2.$

6.  $a_{n+3} - 3a_{n+2} + 4a_{n+1} + 8a_n = 26 \cdot (-1)^n, n \geq 0.$

7.  $a_{n+2} - 8a_{n+1} + 15a_n = 2n - 2, n \geq 0.$

8.  $a_{n+2} + a_{n+1} - 2a_n = n + 5, n \geq 0.$

9.  $a_{n+3} - a_{n+2} + 4a_{n+1} - 4a_n = 13 \cdot 3^n, n \geq 0.$

10.  $a_{n+3} + 3a_{n+2} - 4a_n = 9n + 10, n \geq 0.$