1)
$$\begin{cases} a_{n+2} + a_{n+1} - 2a_n = 0 \\ a_0 = 2, a_1 = -2 \end{cases}$$

$[a_n = \frac{2}{3}[1 - (-2)^{n+1}]$

2)
$$\begin{cases} a_{n+2} + 3a_{n+1} + 2a_n = 0 \\ a_0 = 1, a_1 = -3 \end{cases}$$

$[a_n = [(-1)^{n+1} - (-2)^{n+1}]$

3)
$$\begin{cases} a_{n+2} - 3a_{n+1} + 2a_n = 0 \\ a_0 = 1, a_1 = 3 \end{cases}$$

$[a_n = 2^{n+1} - 1]$

4)
$$\begin{cases} a_{n+2} - 4a_n = 1 \\ a_0 = 1, a_1 = 0 \end{cases}$$

$[a_n = -\frac{1}{3} + \frac{3}{4}2^n + \frac{7}{12}(-2)^n]$

5)
$$\begin{cases} a_{n+2} + a_n = (-1)^n \\ a_0 = 1, a_1 = 0 \end{cases}$$

$[a_n = \frac{(-1)^n}{2} + \frac{i^n}{4}[1 + i + (-1)^n(1 - i)]$

6)
$$\begin{cases} a_{n+1} + a_n = n \\ a_0 = 1 \end{cases}$$

$[a_n = \frac{2n - 1 + 5(-1)^n}{4}]$

7)
$$\begin{cases} a_{n+2} + a_n = (-2)^n \\ a_0 = 1, a_1 = 0 \end{cases}$$

$[a_n = \frac{(-2)^n}{5} + \frac{i^n}{5}[2 - i + (-1)^n(2 + i)]$

8)
$$\begin{cases} a_{n+2} + a_{n+1} + a_n = (-1)^n \\ a_0 = 0, a_1 = 1 \end{cases}$$

$[a_n = (-1)^n + \frac{(3i - \sqrt{3})(\frac{-1-i\sqrt{3}}{2})^n + (-3i - \sqrt{3})(\frac{-1+i\sqrt{3}}{2})^n}{2\sqrt{3}}]$