

$$4) \left\{ \begin{array}{l} A' = -4A \quad (1) \\ B' = 3A - 2B \quad (2) \\ C' = A + 2B \quad (3) \end{array} \right.$$

$$\Rightarrow (1) \Rightarrow n \cdot A(n) - A(0) = -4A(n)$$

$$\Rightarrow A(n) = \frac{A_0}{n+4}$$

$$\Rightarrow (2) \Rightarrow n \cdot B(n) - \overset{0}{B(0)} = 3 \cdot A(n) - 2 \cdot B(n)$$

$$\Rightarrow B(n) = \frac{3A(n)}{n+2} = \frac{3A_0}{(n+4)(n+2)}$$

$$\Rightarrow (3) \Rightarrow n \cdot C(n) - C(0) = A + 2B$$

$$\Rightarrow C(n) = \frac{A(n) + 2B(n)}{n} = \frac{A_0(n+8)}{(n+4)(n+2)n}$$

$$ii) C(t) = A_0 \left(1 - e^{-3t} (\cos h(t) + 2 \sinh(t)) \right)$$

$$iii) \lim_{t \rightarrow \infty} = A_0$$