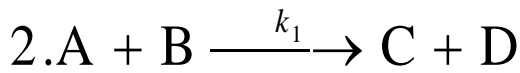


$$1. y'' + 36y = 0$$

$$\text{設 } y = e^{\lambda x}, y' = \lambda e^{\lambda x}, y'' = \lambda^2 e^{\lambda x}$$

$$\Rightarrow \lambda^2 e^{\lambda x} + 36 e^{\lambda x} = 0, \lambda^2 + 36 = 0, \lambda = \pm 6i, y = C_1 e^{6i} + C_2 e^{-6i}$$



$$[A]_0 = A_0, [B]_0 = B_0 = A_0 + \delta, \text{求 } [A]_t = ? [B]_t = ?$$

$$\frac{-dA}{dt} = k[A][B] = k[A][[A] + \delta]$$

$$\int \frac{dA}{[A][[A] + \delta]} = -k_1 dt, \frac{1}{[A][[A] + \delta]} = \frac{1}{\delta} \left[ \frac{1}{[A]} - \frac{1}{[A] + \delta} \right]$$

$$\frac{1}{\delta} \left( -\ln \left( \frac{1}{[A]} - \frac{1}{[A] + \delta} \right) \right) = k_1 t + c$$

$$\frac{1}{\delta} (\ln \frac{[[A] + \delta]}{[A]}) = k_1 t + c$$

$$\frac{[[A] + \delta]}{[A]} = e^{k_1 t \delta} c^*$$

$$[A] = \frac{[[A] + \delta]}{e^{k_1 t \delta} c^*}, [A] e^{k_1 t \delta} c^* = [[A] + \delta], [A] (e^{k_1 t \delta} c^* - 1) = \delta$$

$$[A] = \frac{\delta}{e^{k_1 t \delta} c^* - 1}, [A]_0 \Rightarrow A_0 = \frac{\delta}{c^* - 1} \Rightarrow A_0 c^* - A_0 = \delta$$

$$c^* = \frac{\delta + A_0}{A_0} \Rightarrow [A]_t = \frac{\delta A_0}{(-A_0 + A_0 e^{k_1 t \delta} + \delta e^{k_1 t \delta})},$$

$$[B]_t = \frac{\delta A_0}{(-A_0 + A_0 e^{k_1 t \delta} + \delta e^{k_1 t \delta})} + \delta$$