Exercises

23.33 [1T6]Prerequisites:[1MN],[1MK],[1T1].

Let be given $C \in \mathbb{C}^{n\times n}$, $F, A : \mathbb{R} \to \mathbb{C}^{n\times n}$ continuous, and the solution $Y(t)$ of the ODE

$$\frac{d}{dt}Y(t) = A(t)Y(t) \quad , \quad Y(0) = \mathrm{Id} \ .$$

Solve the equation

$$X' = AX + F \ , X(0) = C \ ,$$

where $X : \mathbb{R} \to \mathbb{C}^{n\times n}$, using $Y(t)$ as an auxiliary function.

Solution 1. *[1T7]*