Exercises

E23.f.2 [1SW]Prerequisites:[1MN],[1MK], Section [2D8].

Given $A, C \in \mathbb{C}^{n\times n}$ and $F : \mathbb{R} \to \mathbb{C}^{n\times n}$ continuous matrix valued functions, solve the ODE

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

where $X : \mathbb{R} \to \mathbb{C}^{n\times n}$.

(Hint: use the method of variation of constants: replace $Y(t) = \exp(-tA)X(t)$*)*

Solution 1. *[1SX]*