Exercises

E12.26 [14D] Prerequisites: [2CS], [118]. Let $C_b = C_b(I)$ be the space of continuous bounded functions $f : I :\to \mathbb{R}$). This is a Banach space (a complete normed space) with the norm $\|f\|_\infty = \sup_x |f(x)|$.

Consider the map $F : [0, \infty) \times C_b \to C_b$ transforming $g = F(\varepsilon, f)$, as defined in the eqn. [(12.20)].

Show that F is continuous.