

Exercises

E16.30 [1C3] Difficulty:*. Let $f : [0, 1] \rightarrow \mathbb{R}$ be Riemann integrable and $\varphi : \mathbb{R} \rightarrow \mathbb{R}$ convex: show that

$$\varphi\left(\int_0^1 f(x) \, dx\right) \leq \int_0^1 \varphi(f(x)) \, dx \quad . \quad (16.31)$$

This result is known as **Jensen's inequality**.