Exercises

11.13 [10J] Having fixed $s, t \in [1, \infty]$ with $s < t$, show that $n^{-1/s}\|x\|_s \leq n^{-1/t}\|x\|_t$ (where we agree that $n^{-1/\infty} = 1$). (Note that this is an inequality between averages).
(Hint. Set $\alpha = t/s$ and $y_i = |x_i|^s$, then use the convexity of $f(y) = y^\alpha$. Another tip: use [10M].)

Solution 1. [10K]