Exercises

E14.1.6 [21N] Prerequisites: [20W]. Fixed $\alpha > 1$ we define, for $x \in \mathbb{R}$, α^x as in [20W]. Show that this is a continuous function and that it is a homeomorphism between $\mathbb{R}$ and $(0, \infty)$. The inverse of $y = \alpha^x$ is the function **logarithm** $x = \log_\alpha y$.