1.B.5 Show that if $X$ is finite and $\succeq$ is a rational preference relation on $X$, then there is a utility function $u : X \rightarrow \mathbb{R}$ that represents $\succeq$. [Hint: Consider first the case in which the individual’s ranking between any two elements of $X$ is strict (i.e. there is never any indifference) and construct a utility function representing these preferences; then extend your argument to the general case.]