Exercises

E3.75 [24K]Prerequisites:[23X],[1Y5],[224]. Given two relations $a \leq b$ and $a < b$ for $a, b \in A$ show that these are equivalent:

- $a \leq b$ is a total order relation and

$$a < b = (a \leq b \wedge a \neq b) \quad ,$$

- $a < b$ is an irreflexive, trichotomous and transitive relations and

$$a \leq b = (a < b \vee a = b) \quad .$$

This latter $a < b$ is called **strict total order**.