Exercises

1. Suppose $x, y, z \in L$ are distinct. Prove that $L = xy = xz = yz$. [Useful identity in more substantial proofs.]

3. More complicated identities like #1 $\quad A \neq B$
(a) If $X \in (AB$, then $(AX = (AB$.
(b) If $C*A*B$, then $(AC = (AB^{op}$.

<u>Hint for (b):</u> If $f : AB \longrightarrow \mathbb{R}$ ruler fcn. with $f(B) > f(A)$, then $-f$ satisfies

$-f(C) > -f(A)$.

2. If $A \neq B$, prove that $(AB^{op}$ consists of all X such that $X*A*B$.

4. Verify the following using ruler functions

If $X \neq Y$ in $\left\{ \begin{matrix} [AB] \\ (AB) \\ [AB^{op} \end{matrix} \right\}$ and $X*Z*Y$, then also

$Z \in \left\{ \begin{matrix} [AB] \\ (AB) \\ [AB \end{matrix} \right\}$.