44   Let x be an element, and let A be any bunch. Prove $\neg\ x{:}\ A \;\Leftarrow\; \cancel{c}(A\,{}^{\backprime}x) = 0$ without using the law $\neg\ x{:}\ A \;=\; \cancel{c}(A\,{}^{\backprime}x) = 0$.

After trying the question, scroll down to the solution.

$$
\begin{array}{lll}
\S & \quad \neg\, x\colon A \;\Longleftarrow\; \mathllap{/}\!\!c(A\lq x) = 0 & \text{contrapositive} \\[2pt]
= & \quad x\colon A \;\Longrightarrow\; \mathllap{/}\!\!c(A\lq x) \neq 0 & \text{law } A\colon B \;=\; A = A\lq B \\[2pt]
= & \quad x = x\lq A \;\Longrightarrow\; \mathllap{/}\!\!c(A\lq x) \neq 0 & \text{law } A\lq B = B\lq A \\[2pt]
= & \quad x = A\lq x \;\Longrightarrow\; \mathllap{/}\!\!c(A\lq x) \neq 0 & \text{context} \\[2pt]
= & \quad x = A\lq x \;\Longrightarrow\; \mathllap{/}\!\!c x \neq 0 & \text{law } \mathllap{/}\!\!c x = 1 \\[2pt]
= & \quad x = A\lq x \;\Longrightarrow\; 1 \neq 0 & \\[2pt]
= & \quad x = A\lq x \;\Longrightarrow\; \top & \\[2pt]
= & \quad \top &
\end{array}
$$