

Assignment 10

Put the following formula in prenex form:

$$\exists u (u < x) \rightarrow \forall y \forall z [(u + y < u + z) \implies \exists w (w \cdot y < w \cdot z)]$$

Answer:

Skolemize the following formula:

$$\exists x \forall y \forall z \exists w (x < y + z \rightarrow y + z < w)$$

Answer:

Convert the following argument into a set \mathcal{C} of clauses such that the argument is valid iff the set \mathcal{C} is not satisfiable.

$$\exists x \left(\forall y (x \cdot y \leq x) \vee \forall y \exists z ((y \cdot z \leq x) \wedge \neg (y \cdot x \leq z)) \right) \quad \therefore \forall x \exists y x \cdot y \leq y$$

Answer:
