Start Time: **Your name:**

Stop Time: **Integrity signature:**

Time limit 15 minutes, not counting download and upload. Please add explanation if over 17 minutes.

1. Let Γ be the set of formulas $\{x_1 \neq x_2, P(x_1) \rightarrow \forall x_3 (P(x_3)\}$. Then,

$$\Gamma \nvDash \neg P(x_1).$$

Give an example of a structure $\mathfrak{A}$ and an object assignment σ that illustrates that $\Gamma \nvDash \neg P(x_1)$. Specify the the universe $|\mathfrak{A}|$ as a set, specify the interpretations of nonlogical(s) as sets of tuples, and describe the object assignment.