Logic 2 Homework 2

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Feel free to cite results from your lecture notes, the official lecture notes, or textbooks referenced on the course website. You are also allowed and encouraged to collaborate with your classmates, but you must write your own solutions. Please do not use any other sources without first discussing with the instructor.

Problem 2.1. Finish **??** (**??**) from the notes.

Exercises from Marker:

Problem 2.2. Exercise 2.5.10, on the universal theory $T_\forall$ of a theory T.

Problem 2.3. Exercise 2.5.12, which uses 2.5.10 to prove a semantic test for being equivalent to a *universal* formula. (One of the form $\forall \bar{y}, \phi(\bar{x}, \bar{y})$ with ϕ quantifier free.)

Problem 2.4. Exercise 2.5.15, on $\forall\exists$ (also known as Π_2) formulas. (We will use part (a) soon to prove the Ax-Grothendieck Theorem.)

Problem 2.5. Exercise 2.5.17(a), on existentially closed models.

Problem 2.6. Exercise 3.4.2 on $\mathsf{DAG}_\forall$.