Model theory

Exercise 2

1. Exercise 2.9

2. Prove Theorem 3.4.

3. Let $x = (x_1, ..., x_n)$ be a sequence of variables, Σ be a set of formulas of the form $\psi(x)$ and $\phi(x)$ be a formula. Show that if $\Sigma \models \phi$, then there is a finite $\Sigma' \subseteq \Sigma$ such that $\Sigma' \models \phi$.

4. Exercise 3.8

5. Exercise 3.9