

**Math 506 Model Theory I**  
Problem Set 2

**Due: Wednesday September 24**

- 1) Let  $T$  be an  $\mathcal{L}$ -theory. Prove that following are equivalent.
  - i)  $T$  has a universal axiomatization (i.e.,  $T$  has can be axiomatized using only universal sentences).
  - ii) If  $\mathcal{N} \models T$  and  $\mathcal{M} \subseteq \mathcal{N}$ , then  $\mathcal{M} \models T$ .

Do the following problems from the text: 2.5.11, 2.5.15, 2.5.26, 3.4.3.