

1. Gersting 1.2
  - (a) 1.2.11 (justify a proof)
  - (b) 1.2.20 (build proof sequence)
  - (c) 1.2.24 (contrapositive)
2. Gersting 1.3
  - (a) 1.3.9e (build predicate wff)
  - (b) 1.3.12a,c,d (build predicate wff)
  - (c) 1.3.18d,f (translate predicate wff into English)
  - (d) 1.3.22 (negation)
3. Express 'Will Rogers never met a man he didn't like' in predicate logic. Define any predicates you need.
4. (Russell and Norvig) Define the following predicates using predicate logic: Parent, GrandChild, Daughter, Son, Aunt, FirstCousin. Define  $\text{foo}(x,y)$  so that it means 'x is foo of y'. You can assume the following predicates are already defined: Male(x), Female(x), Child(c,p), Sibling(x,y). For example, the predicate for Parent is defined as follows:
$$\text{Parent}(p, c) \Leftrightarrow \text{Child}(c, p)$$
5. (Bonus question) Gersting 1.5 (Prolog)
  - (a) 1.5.9a,b,c
  - (b) 1.5.10a