

CSE 321: Discrete Structures
Assignment #2
October 7, 2005
Due: Friday, October 14

Reading Assignment: Section 1.5 and handout on logic.

Problems:

1. Give the negation of each of the following statements:
 - All good students study hard.
 - No males give birth to their young.
 - No students in mathematics are unable to use a computer.
 - $\forall x \exists y x = y^2$
2. Section 1.3, exercise 56. Part d) is **extra credit**.
3. Section 1.4, exercise 12, parts a) through j).
4. Section 1.4, exercise 28.
5. Section 1.4, exercise 30, parts a), b), and e).
6. Define predicates and a universe of discourse to show that this statement
is not equivalent to
$$\forall x(P(x) \rightarrow Q(x))$$

is not equivalent to
$$\forall x P(x) \rightarrow \forall x Q(x).$$
7. Section 1.5, exercise 4.
8. **Extra Credit:** Section 1.2, exercise 46 (the necessary definitions are given in the column above the exercise).