

MAT 200: HOMEWORK 2

DUE WED, FEB 10

1. Let A, B, C be logical statements. Given that the following are true:

$$A \text{ OR } B$$

$$B \implies \text{NOT } C$$

$$C \implies ((\text{NOT } A) \text{ OR } B)$$

prove that C is false.

In problems 2,3, you need to a)write the obvious conclusion from given statements; and b)justify the conclusion, by writing a chain of arguments which leads to it. It may help to write the given statements and conclusion by logical formulas (denoting the statements which are used by letters A, B, \dots connected by logical operations OR, AND, \implies , \dots).

2. If Jack comes home late from school, it means he either had a track meet or a theater club. After a track meet, he comes home very tired. Today he came home late but was not tired. Therefore, \dots

3.

All hummingbirds are richly colored

No large birds live on honey.

Birds that do not live on honey are dull in color.

Therefore, \dots

(You may assume that “dull in color” is the same as “not richly colored”).

4. Textbook, p. 54, problem 7
5. Textbook, p. 54, problem 9
6. Textbook, p. 54, problem 11