Discussion Problem

CS 173: Discrete Structures

Problem 1. Logical Reasoning

Suppose we are given the following facts:

1. All chestnut-eating animals are fun-loving

2. No penguin eats mulberries

3. Some well-dressed animals are uncomfortable

4. At least one penguin is uncomfortable

5. All animals eat mulberries or chestnuts

6. No uncomfortable animal eats mulberries

Which of the following statements can be proved (inferred) from the above facts?
     You may assume that "not comfortable" is the same as "uncomfortable". You may also assume that penguins are known to be animals.

Select one or more:

(a) Every comfortable penguin eats mulberries

(b) At least one penguin is well-dressed

(c) No penguins are fun-loving

(d) There is at least one fun-loving well-dressed animal

(e) All penguins are fun-loving

(f) All penguins are uncomfortable