

Homework Assignment #1

Due: September 10, 9:30 a.m.

Along with your solutions to this assignment, hand in a *separate* sheet of paper containing your student number and the following declaration: “I have read and understood the policy on academic honesty on the CSE1019A course web page.” Sign this paper and date it. Without this declaration, your solutions will not be marked.

1. Consider the following three propositions:

- m : The Maple Leafs will win the Stanley Cup.
- c : The Canadiens will win the Stanley Cup.
- f : The Flames will win the Stanley Cup.

Use m , c , f and connectives to write down a formula representing each of the following sentences.

(a) The Maple Leafs will win the Stanley Cup, unless the Flames do.

(b) The Maple Leafs will win the Stanley Cup only if neither the Flames nor the Canadiens do.

2. On a game show, a contestant is shown three boxes. Each box is either empty or filled with gold. (The number of empty boxes could be 0, 1, 2 or 3.) The contestant can choose one of the boxes and take home the contents of it.

A sign on the first box says “At least one of the other boxes contains gold.” A sign on the second box says “Both of the other boxes are empty.” A sign on the third box says “At least one of the other boxes is empty.”

The game show host tells the contestant that *either* all of the signs contain true statements *or* all of the signs contain false statements.

Which box should the contestant choose, assuming he likes gold? Explain why your answer is correct. (Make your answer as brief as possible.)