

Name _____

Email _____

6.1120 Fall 2025

Miniquiz #8

5 Minutes

1. Given a frame $\sigma = \{x : 3, y : 7\}$, evaluate and provide a derivation for the following expression using the basic inference rules for IMP:

$(\sigma, x+y) \rightarrow$

2. Suppose we want to add a new type of statement to IMP, $x \leftrightarrow y$, that swaps the values of the variables x and y . For example, the following program prints 2 and then 1 to the command line:

$x = 1; y = 2; x \leftrightarrow y; \text{print}(x); \text{print}(y);$

Write the inference rule for the statement $x \leftrightarrow y$: