

Friday, February 22

Name _____

Email _____

6.s081 Spring 2019

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:

$$\frac{}{(\sigma, x + y) \rightarrow}$$

2. Language Design: lets add a couple new programming constructs to IMP.

a) Write the inference rule(s) for the statement $x \leftrightarrow y$, which 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 <-> y; print(x); print(y)
```

b) Write the inference(s) rules for the statement $x = ?$, which non-deterministically assigns an integer value to the variable x . Specifically, the result stored in x can be any integer value.