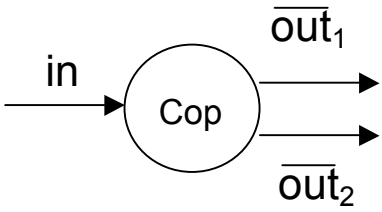
CSE 6324: Advanced Topics in Software Engineering
Fall 2009
Additional Problems for HW 4
Due Date: 12/01/2009

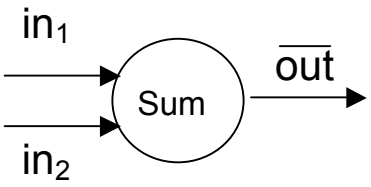
Problem 1: (5 + 5 + 10 = 20 points)

(1) Define an agent Copy:



which inputs a value and outputs it at two ports, repeatedly.

(2) Define an agent Sum:



which inputs two numbers and then outputs their sum, repeatedly. Define *Diff* and *Prod* (for difference and product) similarly.

(3) Draw the diagram of a system, built from the above agents, which repeatedly inputs a pair of numbers (at two different ports) and outputs the difference of their squares.

Problem 2: (10 points)
Give the inference diagram for the following action:

$$(A'|B)\backslash c \xrightarrow{\tau} (A|B')\backslash c$$

where the definitions of A, A', B and B' are provided below:

$$A \overset{def}{=} a.A' \qquad B \overset{def}{=} c.B'$$

$$A' \overset{def}{=} \bar{c}.A \qquad B' \overset{def}{=} \bar{b}.B$$