17-355/17-655/17-819: Program Analysis
In-Class Exercises
January 24, 2019   **Andrew ID:** _____

1. Define a flow function for a conditional branch testing whether a variable x < 0.

2. Consider the program described in class:

1: x := 10
2: y := 0
3: z := 0
4: if x = 0 goto 8
5: y := 1
6: x := x − 1
7: goto 4
8: x := y

Given that this program contains a loop, think about how you the dataflow analysis approach discussed so far in class could be extended to handle the loop correctly and efficiently. What are the final abstract values produced by the analysis?

How much work does the analysis need to do to produce this result?