Assume you are performing a liveness analysis on the following graph:
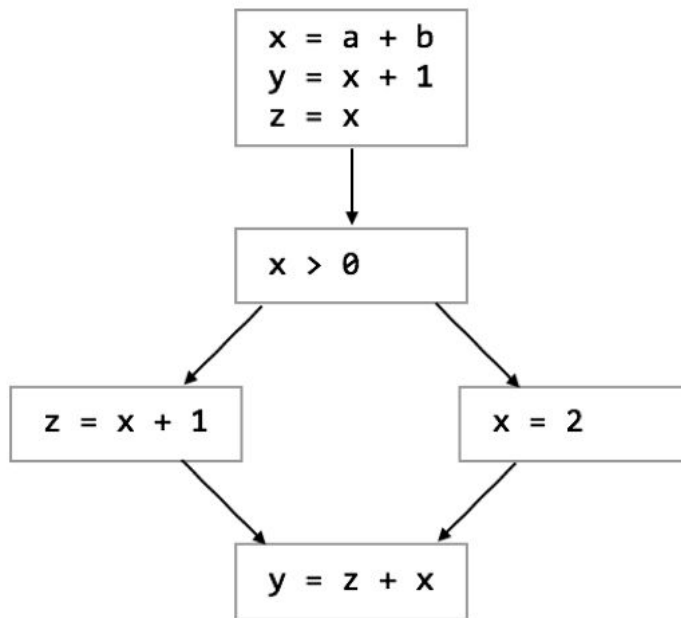
1. What are the bitvectors IN and OUT that the analysis computes for each basic block (assume the method returns y)?

2. Do the results of liveness analysis enable any optimization opportunities?