(For Fig 9.10, please refer to [Compliers Principles, Techniques and Tools])

Exercise 9.2.1:
For the flow graph of Fig. 9.10 (see the exercises for Section 9.1), compute
a) The gen and kill sets for each block.
b) The IN and OUT sets for each block.

Exercise 9.2.2:
For the flow graph of Fig 9.10, compute the e_gen, e_kill, IN, and OUT sets for available expressions.

Exercise 9.2.3:
For the flow graph of Fig 9.10, compute the def, use, IN, and OUT sets for live variable analysis.
Exercise 9.2.11:

Our data-flow analysis so far do not take advantage of the semantics of conditionals. Suppose we find at the end of a basic block a test such as

    if (x < 10) goto ...

How could we use our understanding of what the test $x < 10$ means to improve our knowledge of reaching definitions? Remember, “improve” here means that we eliminate certain reaching definitions that really cannot ever reach a certain program point.