Optimising Compilers
Supervision 1

Supervisor: Joe Isaacs (josi2).
All work should be submitted in PDF form 36 hours before the supervision to the email `josi2@cam.ac.uk`. If you have any questions on the course please include these at the top of the supervision work and we can talk about them in the supervision.

1. What is an unreachable procedure?
2. What is the different between semantics and syntactic data flow computations. Your answer should mention computability and safe approximation.
3. Define, in words, when a variable is live and when an expression is available. What is the difference between semantic and syntactic. Then derive data flow equations where possible.
4. How do *ref* and `def` change when address-taken local variables are involved.
5. How is LVA and AEA analysis used in compilers?
6. `http://www.cl.cam.ac.uk/teaching/exams/pastpapers/y2014p7q11.pdf`
7. `http://www.cl.cam.ac.uk/teaching/exams/pastpapers/y2001p7q4.pdf`
   (a)
8. `http://www.cl.cam.ac.uk/teaching/exams/pastpapers/y2002p7q4.pdf`
   (a and b), then use the register allocation algorithm to assign registers to each variable.