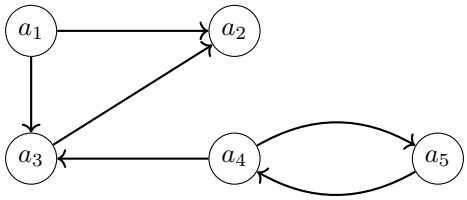
6CCS3AIN & 7CCSMAIN, 2018, Tutorial 8 (Version 1.0)

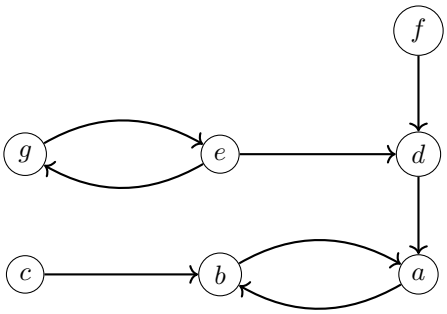
1. Consider the argumentation framework shown below.



   (a) Write down the set of equations that you can solve to determine the complete extensions of the argumentation framework above.

   (b) Use the equational approach to find the complete extensions of the argumentation framework above.

2. Consider the argumentation framework shown below.

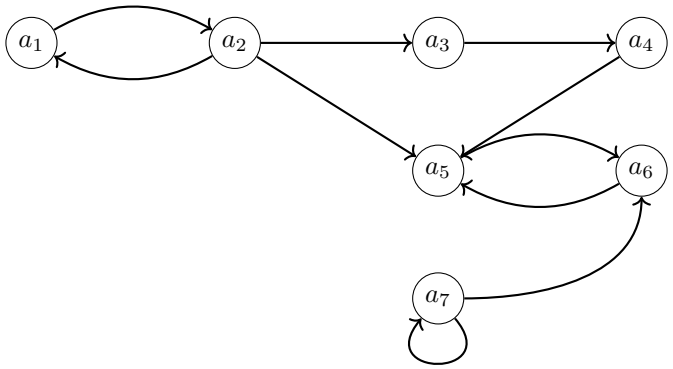


   (a) Using the argument game for grounded semantics, draw the entire game tree for the game where the proponent starts by moving the argument a.

   (b) Identify all of the strategies for the proponent P, noting whether they are winning strategies or not for the proponent.

   (c) Is a a member of the grounded extension?

3. Consider the argumentation framework $\langle S, R \rangle$ shown below.



(a) Compute all strongly connected components of $\langle S, R \rangle$. Distinguish the ones that are trivial from the ones that are non-trivial.

(b) Divide the strongly connected components of $\langle S, R \rangle$ into layers according to their levels. Indicate any dependencies of a layer on previous layers.

(c) Use this decomposition to calculate the preferred extensions of $\langle S, R \rangle$.