Note: This is an edited version of a solution suggested by a SIT105 student for a previous assignment. There may be some inaccuracies but it should give you an idea of how to present Question 1.

Question 1

Abstraction:

The elaboration stage of the requirements engineering process is an extremely important one. It defines the final form of project requirements, while creating necessary supporting documentation (Alexander 2005). Although all goals should be set in the elicitation stage, they are often identified later in the process when initial questions that should have been asked were taken for granted (Lamsweerde 2001). Goals are vital to any project as they provide a base from which the project can be built from. They supply a criterion from which the requirements specifications can be created (Lamsweerde & Letier 2002). During the elaboration stage, the stress is on finalizing the goals. This is not only so that requirements can be identified to support the goals, but also so that goal attributes such as priority and utility may be defined (Darimont & Lamsweerde 1996).

The elaboration stage of requirements engineering utilises a variety of problem solving techniques in achieving the desired outcomes. Fitzgerald (2009, p. 12) suggests that:

> "Models are considered to be fundamental to supporting requirements engineers at different stages of the requirements process (Nuseibeh & Easterbrook 2000). Accordingly, many such modelling frameworks have been developed to help with different RE activities, ranging from stakeholder analysis (Alexander 2005) to the formal specification of requirements (Lamsweerde 2000)".

Fitzgerald goes on to discuss a 'key set of activities' that are undertaken during the requirements elaboration stage. These include abstractions.

Abstraction is the idea that every problem, no matter how big or small, can be thought of in many ways, from extremely specific to very abstract (Markman n.d.). Markman (n.d.) describes how it is useful to distance yourself from a problem to view it in less specific detail and therefore more abstraction. This abstraction of the problem allows you to focus on the problem as a whole instead of narrowing in onto specific details that may be too difficult to solve on their own.

References

Alexander, IF 2005, 'A Taxonomy of Stakeholders: Human Roles in System Development', *International Journal of Technology and Human Interaction*, vol. 1, no. 1, pp. 23-59

Darimont, R & Lamsweerde, AV 1996, 'Formal Refinement Patterns for Goal-Driven Requirements Elaboration', Proceedings of the 4th ACM SIGSOFT symposium on Foundations of software engineering, ACM SIGSOFT, New York, USA, pp. 179, <http://140.134.26.25/~cyt/cyt/data/paper/FormalRefinementPatternsForGoalDrivenRequirementsElaboration.pdf>

Fitzgerald, C 2009, Support for Collaborative Elaboration of Requirements Models, Department of Computer Science University College London, retrieved 19 April 2015, <http://sre-research.cs.ucl.ac.uk/TransferReport(old).pdf>

Lamsweerde, AV 2000, 'Formal specification: A roadmap', ICSE – Future of SE Track, pp. 147-159

Lamsweerde, AV 2001, 'Goal-Oriented Requirements Engineering: A Guided Tour', Proceedings from the Fifth IEEE International Symposium on Requirements Engineering, IEEE, Toronto, Ont., pp. 251, <http://courses.cs.ut.ee/2010/sem/uploads/Main/04RE-reading-goals.pdf>

Lamsweerde, AV & Letier, E 2002, 'Handling Obstacles in Goal-Oriented Requirements Engineering', IEEE Transactions on Software Engineering, vol. 26, no. 10, pp. 978-1005, doi:10.1109/32.879820

Markman, A n.d., The Abstraction Method of Problem Solving, 99U, retrieved 19 April 2015, <http://99u.com/articles/15170/the-abstraction-method-of-problem-solving>

Nuseibeh, B & Easterbrook, SM 2000, 'Requirements engineering – A roadmap', ICSE – Future of SE Track, pp. 35-46