1. The 12 *Agile Principles* are listed on page 309 of the textbook. These principles are aimed to improve the software development process (compared to waterfall-type approaches), the quality of developed software, and the customer satisfaction to the final outcome.

Think about those principles and their purpose, and select three (3) such principles that you consider the most important ones for your *innovativeness*, *productivity*, and *job well-being* if you worked in a project where some agile methodology is practiced. Give an explanation for each of your selections.

|  |  |
| --- | --- |
| Principle | Explanation |
|  |  |
|  |  |
|  |  |

1. The development of safety-critical software consists of different development cultures defined by, for example:

* Type of product and system – from medical devices to machines and nuclear power plants
* The role of software in the system – is it mainly a software-based system or is software still only in a restricted role and the product is perceived as, for instance, a mechanical device
* The size and scope of the system – small personal devices clearly require a very different approach to large plant-level systems
* The risk level of the system – factory machines have a very different risk level to nuclear power plants

Section 3.1 (pp. 38–49) of the research report <http://www.vtt.fi/inf/pdf/tiedotteet/2011/T2601.pdf> contains a discussion on the applicability of agile methods in safety-critical development.

Based on that section, mention 2 potential obstacles that you may encounter when applying some agile methodology for developing safety-critical software? And if you consider those obstacles serious, which life-cycle model would you then prefer for safety-critical software development?

|  |  |  |
| --- | --- | --- |
| Obstacle | Explanation | Safety-Critical (Yes/No) |
|  |  |  |
|  |  |  |