1. (Max)According to the principles behind the Agile Manifesto:
    1. (**3 pts**) What is the highest priority?

    The highest priority is to satisfy the customer.

    2. (**3 pts**) How is this priority achieved?

    This is achieved by delivering valuable, working software to the customer early and often.

2. (**8 pts**) (Max)At the beginning of a software development project, the developer must provide two estimates to the client. What are the two estimates and how are they calculated?

The two required estimates that a customer needs prior to the start of a project are time and cost. Time estimates are determined by the total time a software engineering team thinks the whole project will take, as well as the desired time of the customer. Customers often have their own internal goal for a date of completion, for a specific event or just an arbitrary date. Cost is important, because customers often have a limited budget. Cost estimates are negotiated between the customer and the developer. Customers want as low prices as possible, and developers need to be able to pay their team for the time put in, as well as make some profit for the project to be worthwhile.

3. (Scott) A software development process is “the process by which user needs are translated into a software product”. The software development processes discussed in class (waterfall and incremental development) as well as the one described by the textbook have at least four steps in common. (**Hint**: Also listed as the four knowledge areas covered in this class.) Name the four steps and briefly describe them.
    1. (**3 pts**) Step 1: Requirements- These are features of the program that the customer requests and wants out of the program, teams may have to figure out how to translate a client's wants into tangible goals they can work towards.
    2. (**3 pts**) Step 2: Design- This phase takes what the client wants and begins translating them into an actual program, teams will begin planning their program around these requirements and decide how the program should be constructed.
    3. (**3 pts**) Step 3: Construction- This phase is the actual building of the program, where lines of code are written, where programmers begin implementing their design into a tangible product.

4. (**3 pts**) Step 4: Testing- Finally this phase ensures everything has worked correctly, this could be as simple as ensuring the program functions as expected, or in the case of incremental development, this could be going back to the client and getting feedback on the product and adjusting accordingly.

4. (**10 pts Kim**) Briefly describe the major differences between an incremental development process and the waterfall model of development.

For the waterfall model, it's important to have all the details about the final product in the very first step since there is only one cycle in this model, and it'll be difficult to change anything once the planning step is completed. This also results in a higher amount of risk because testing is allowed only everything is finished and longer waiting time since all the desired features will all have to be included at the very first and only release. While in the incremental process, the waiting time will be shorter since there will be several releases of the product. Each time some new functionalities will be added until the desired product is achieved. The fact that there are several releases makes this process more flexible, which means it is easier to test, add or change anything, consequently reducing the amount of risks.

5. (John) In the context of software development, the terms incremental and iterative are often used in combination (e.g. "iterative and incremental development") or sometimes used interchangeably to describe a process (e.g. the definition of incremental development includes the term iterative). However, the terms have distinct meanings. Please provide your own definition of each.
    1. (**3 pts**) Define the term incremental in the context of a software development process
        1. Process where requirements, definition, design, implementation and testing happen in conjunction with one another, which is repeated for new additions along the way so that you complete one addition at a time
    2. (**3 pts**) Define the term iterative in the context of a software development process
        1. The iterative process is where you start a feature but you go through the steps in order, instead of concurrently. For example, you would start with requirements, then move to definition and so on without doing two steps together. If you had to move back to a previous step, you must start the process over from that point.

6. (**8 pts**) The name of this department is Computer Science and Software Engineering. As the name implies, we have two distinct paths of study; the first is a scientific discipline and the second is an engineering discipline. Please briefly describe the difference between computer science and software engineering.
    1. Computer Science is a very strong tool and a large building block for Software Engineering. It is vital to have an understanding of computer science so that you can apply computer science ideas and have a good understanding of Software Engineering. Computer science is more theory and software engineering is more application.