1) Clearly, making manual testing time consuming and repetitive after any changes in the code. That's why we automate tests.
   Test pyramid consists of 3 layers which are UI tests, Service tests and Unit tests. It tells us to write tests with different granularity. The higher level goes, the less tests we must take. We must write lots of unit test and write UI tests as low as possible.
   In the test sample application, author writes a simple microservice including a test suite with tests for the different layers of the test pyramid. There are 3 endpoints called Get Hello, Get Hello/{lastname} and weather. And then he talks about what is unit test, why we called them as "unit" and what we mean by saying "unit". After that he explains what is solitary unit tests and sociable unit tests as we discussed in lecture.

2) Regression is a kind of black box testing. It makes sure the project works fine with new functionality, bug fixes or another change in existing feature and is used to authenticate code change in a software whether it does affect the existing project or not.

3) It is a statistical technique that compares two versions of mobile app or web site against each other to decide which one's performance is better.

   Basically, we take a web screen and modify it to create a second version it and make an experiment in which two or more variants of a page are shown to random users. A refers to 'control' or the original testing variable. Whereas B refers to 'variation' or a new version of the original testing variable.

4) Black box testing is a software testing method in which the internal structure, design or implementation of the item being tested is not known tester.

   White box testing is a software testing method in which the internal structure, design or implementation of the item being tested is known by tester.

5) Mutation testing is a type of software testing performed to design new software tests and to evaluate the quality of existing tests. Mutation testing is about modifying a program in small ways. It focuses on helping the tester to develop effective tests or find weaknesses in the test data used for the program.

6) Behaviour driven development is an approach that aims to show the features and behaviour of the system by making short meetings with business stakeholders and developers, and then show with written automation codes that the software behaves as desired. After the automation codes are run, the test results are quickly observed, and the deficiencies can be determined, and action can be taken quickly.

7) Agile testing quadrants is a tool that divides the entire agile testing methodology into four key quadrants. It helps the whole team to communicate instantly and deliver a high-quality product. With the help of agile test quadrants, entire testing process can be explained in very easy to understand language and the whole team can work effectively on the product.

   Quadrant 1: Technology oriented tests that support the team

Quadrant 2: Business oriented tests that support the team

Quadrant 3: Business oriented tests that criticize the product

Quadrant 4: Technology oriented tests that criticize the product