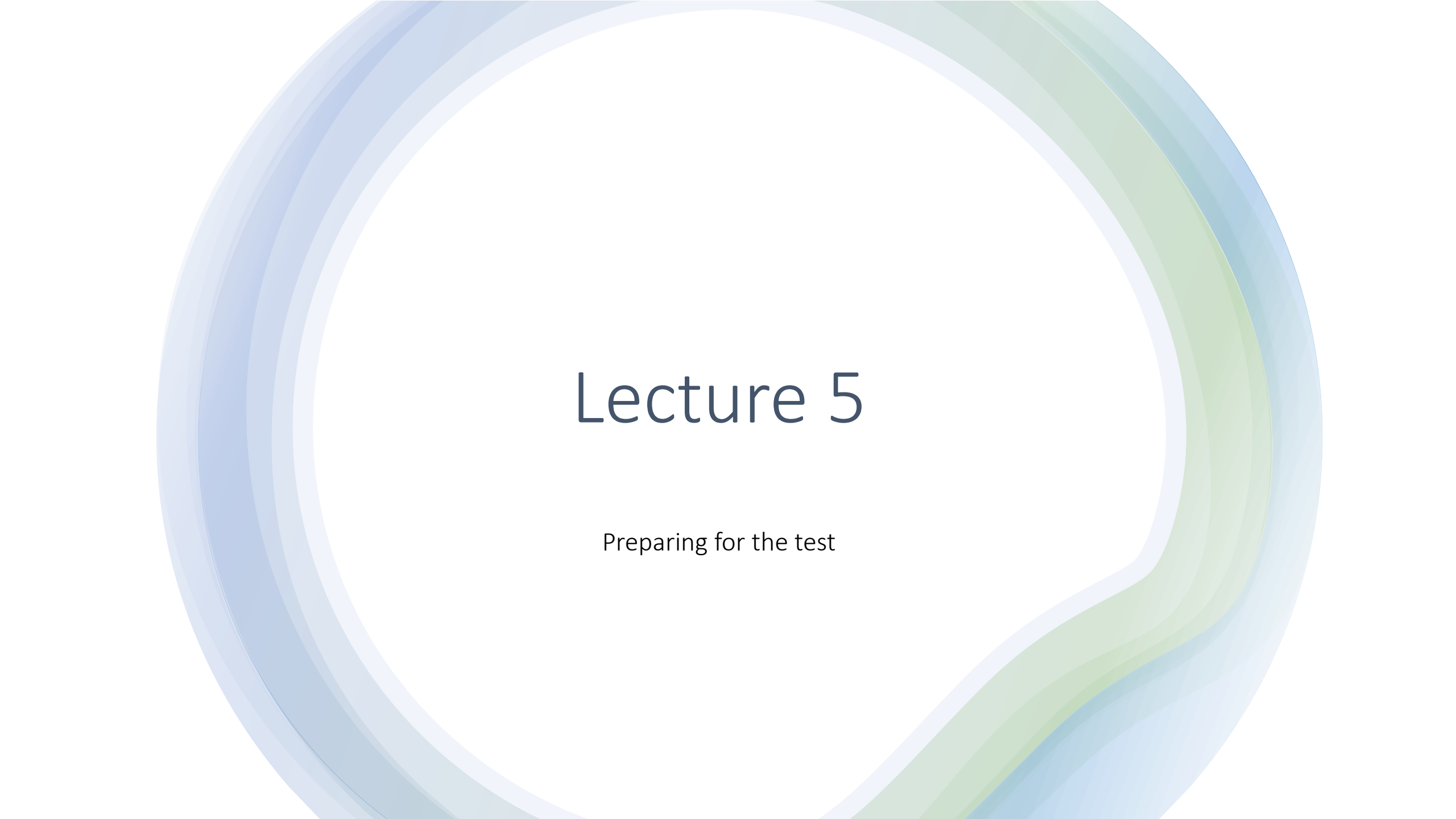




Lecture 5

Preparing for the test

Tasks

Preparing for the test

1. There are 20 candies in the package, 15 of which are chocolate, and 5 are lollipops. The girl randomly takes out 7 sweets. Find the probability that all the extracted candies are chocolate.
2. When studying the authorized capital of banks, it was found that a fifth of the banks have an authorized fund of more than 100 million rubles. rub. Find the probability that among 1800 banks have an authorized capital of more than 100 million. rub.:
 - a) not less than 300;
 - b) from 300 to 400 inclusive
3. Suppose the code consists of 2 letters followed by 3 digits. Find the number of:
 - a) codes
 - b) codes with different letters
 - c) codes with the same letters.

Preparing for the test

4. The student knows 18 of the 23 questions in the program. Find the probability that the student knows the 3 questions asked by the examiner.
5. Four students from the first group, six from the second, and five from the third are selected to participate in the student selection sports competition. The probabilities of a student from each group getting into the university team are 0.5; 0.4; 0.3, respectively. What is the probability that a randomly selected participant in the competition got into the team? A randomly selected student got into the team. What is the probability that he is from the third group.
6. Three shooters shoot at the same target simultaneously. The probabilities of hitting with one shot are 0.7, 0.8, and 0.9, respectively. Find the probability that with a simultaneous volley of these shooters the targets will be:
 - a) only one hit;
 - b) at least one hit.

Preparing for the test

7. The test on the subject consists of six problems, and the test is considered passed if the student has solved at least four of them. The student can solve each problem with a probability of 0.6. What is the probability that he will pass the test?
8. Calculator manufacturers know from experience that 1% of calculators sold are defective. An audit firm bought 500 calculators. What is the probability that 4 calculators will have to be replaced? No more than 20 calculators?
9. There are 28 tiles in a game of dominoes. Dominoes are played by four people who, when starting the game, take all the tiles apart. How many different ways of taking apart the tiles in a game of dominoes are possible?
10. Two different digits are randomly selected from the digits 1 through 5. What is the probability that 2 is one of the selected digits if the sum of the digits is odd? What is the probability that the sum of the digits is odd if 2 is one of the digits?

Preparing for the test

11. A dental clinic distributes advertising leaflets at the entrance to the metro. Experience shows that in one case out of a thousand, a visit to the clinic follows. Find the probability that when distributing 50 thousand leaflets, the number of visits will be:
- a) equal to 41,
 - b) be between 36 and 47