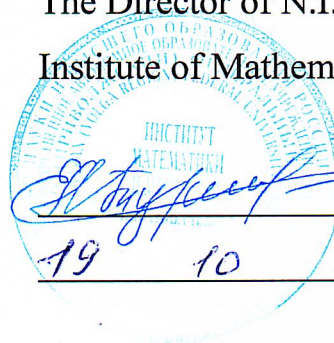


MINISTRY OF SCIENCE AND HIGHER EDUCATION
OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Kazan (Volga Region) Federal University"
N.I. Lobachevsky Institute of Mathematics and Mechanics

APPROVED BY

The Director of N.I. Lobachevsky
Institute of Mathematics and Mechanics



E. A. Turilova

2023

**Evaluation System of the Entrance Examination
in Mathematics**



2023

Entrance examinations for Bachelor and Specialist programs are conducted in person and (or) using distance technologies.

It takes 3 hours and 55 minutes to complete entrance examination in Mathematics. The work consists of two parts with 18 tasks.

Part 1

Each of the tasks #1-11 is considered to be completed correctly if the examinee has given the correct answer in the form of an integer or a finite decimal. A correct answer to tasks #1-11 gives 1 point.

Part 2 (tasks with detailed answers)

The number of points awarded for tasks #12-18 depends on the completeness of the solution and the correctness of the answer.

General requirements for the tasks with detailed answers: the solution must be mathematically correct, complete; all possible cases must be considered. The solution methods, the forms of solution recording and the forms of answer recording can be different. The maximum score shall be awarded for a solution with reasonably obtained correct answer. 0 points shall be given for a correct answer with no solution text.

The examiners check only the mathematical content of the solution, and do not take into account the peculiarities of the writing.

When performing the task, any mathematical facts contained in the textbooks included in the federal list of textbooks approved for use in state-accredited educational programs of secondary general education may be used without proof and references.

In part 2, answers for tasks #12, 14, 16 can give a maximum of 2 points, answers for tasks #13, 15 can give a maximum of 3 points, and #17, 18 can give a maximum of 4 points.



Criteria for evaluating tasks with detailed answers

Task #12	
Content	Points
Both parts of the task have reasonably correct answers	2
Part "a" has a reasonably correct answer OR incorrect answers have been obtained due to a computational error, but there is a correct sequence of all steps for solving both parts: "a" and "b"	1
The solution does not meet any of the criteria listed above	0
Maximum score	2

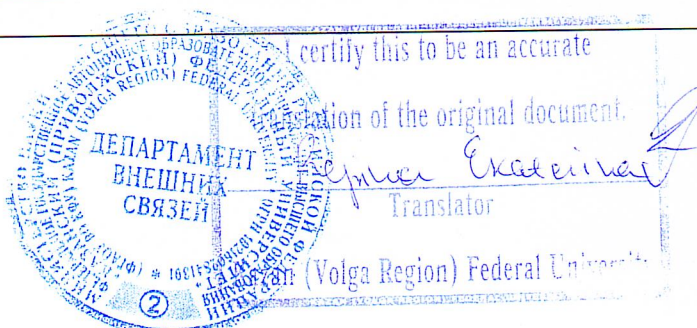
Task #13	
Content	Points
There is a correct proof of the statement in part "a", and reasonably correct answer has been obtained in part "b"	3
Reasonably correct answer has been obtained in part "b" OR There is a correct proof of the statement in part "a", and incorrect answer in part "b" obtained due to computational error, but with reasonable solution	2
There is a correct proof of the statement in part "a", OR an incorrect answer was received in part "b" due to computational error, but with reasonable solution, OR A reasonably correct answer is received in part "b" using the statement in part "a", but the part "a" is not completed	1
The solution does not meet any of the criteria listed above	0
Maximum score	3



Task #14	
Content	Points
Reasonably correct answer	2
Reasonable answer that differs from the correct one by eliminating or adding one or two points, OR an incorrect answer is obtained due to a computational error, but there is a correct sequence of all steps for solution	1
The solution does not meet any of the criteria listed above	0
Maximum score	2

Task #15	
Content	Points
There is a correct proof of the statement in part "a", and reasonably correct answer is obtained in part "b"	3
Reasonably correct answer is obtained in part "b" OR There is a correct proof of the statement in part "a", and incorrect answer in part "b" received due to computational error, but with reasonable solution	2
There is a correct proof of the statement in part "a", OR an incorrect answer was received in part "b" due to computational error, but with reasonable solution, OR A reasonably correct answer is received in part "b" using the statement in part "a", but the part "a" is not completed	1
The solution does not meet any of the criteria listed above	0
Maximum score	3

Task #16	
Content	Points
Reasonably correct answer	2
The mathematical model is correctly constructed	1
The solution does not meet any of the criteria listed above	0
Maximum score	2



Task #17	
Content	Points
Reasonably correct answer	4
Both correct parameter values are obtained using correct reasoning, but - or one or two incorrect values are also included in the answer; - or the solution is insufficiently reasoned	3
At least one correct parameter value has been obtained via correct reasoning	2
The task has been reduced to investigation of: - either relative position of three circles; - or two quadratic equations with a parameter	1
The solution does not meet any of the criteria listed above	0
Maximum score	4

Task #18	
Content	Points
Reasonably correct answers are obtained in parts "a", "b" and "c"	4
Reasonably correct answers are obtained in part "c" and either in part "a" or "b"	3
Reasonably correct answers are obtained in parts "a" and "b" OR Reasonably correct answer is obtained in part "c"	2
Reasonably correct answer is obtained in either part "a" or "b"	1
The solution does not meet any of the criteria listed above	0
Maximum score	4

The maximum primary score is 31 points, which corresponds to 100 test points.

The minimum passing score is 39 test points. If an applicant receives less than 39 test points, the entrance examination is considered FAILED.



Scale for converting primary score to test score

PRIMARY SCORE	TEST SCORE
1	13
2	26
3	39
4	42
5	45
6	48
7	51
8	54
9	57
10	60
11	64
12	66
13	68
14	70
15	72
16	74
17	76
18	78
19	80
20	82
21	84
22	86
23	88
24	90
25	92
26	94
27	96
28	98
29	100
30	100
31	100



I certify this to be an accurate translation of the original document.

Арина Еваткина
Translator

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