

Teacher : **TEACHER**

EXAM - MA

DATE

DURATION

AC-345

Student 1

SCIPER: **999000**Room: **R-A**

Signature:

Do not turn the page before the start of the exam. This document is double-sided, has 4 pages, the last ones possibly blank. Do not unstaple.

- Place your student card on your table.
- **No other paper materials** are allowed to be used during the exam.
- Using a **calculator** or any electronic device is not permitted during the exam.
- For the **multiple choice** questions, we give :
 - +3 points if your answer is correct,
 - 0 points if you give no answer or more than one,
 - 1 points if your answer is incorrect.
- For the **true/false** questions, we give :
 - +1 points if your answer is correct,
 - 0 points if you give no answer or more than one,
 - 1 points if your answer is incorrect.
- Use a **black or dark blue ballpen** and clearly erase with **correction fluid** if necessary.
- If a question is wrong, the teacher may decide to nullify it.

Respectez les consignes suivantes Observe this guidelines Beachten Sie bitte die unten stehenden Richtlinien					
choisir une réponse select an answer Antwort auswählen	ne PAS choisir une réponse NOT select an answer NICHT Antwort auswählen	Corriger une réponse Correct an answer Antwort korrigieren			
  		 			
ce qu'il ne faut PAS faire what should NOT be done was man NICHT tun sollte					
     					

CATALOGUE

First part: multiple choice questions

For each question, mark the box corresponding to the correct answer. Each question has **exactly one** correct answer.

Let the subset $E \subset \mathbb{R}$ defined by $E = \left\{ 2 \left(1 + \frac{1}{n} \right)^n : n \in \mathbb{N} \setminus \{0\} \right\}$.

Then

- 10 is a majorant of E
- the minimum of E is 2
- E is closed
- the supremum of E belongs to E

Question statement with one possible correct answer

- Correct Answer Choice
- False Answer Choice
- False Answer Choice
- False Answer Choice

Question statement with several possible correct answers

- | | |
|---|--|
| <input checked="" type="checkbox"/> Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
| <input checked="" type="checkbox"/> Other Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
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Question statement with several possible correct answers

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CATALOGUE

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TRUE FALSE

Let A be a bounded and non empty subset of \mathbb{R} .

Then $\inf A \in A$ and $\sup A \in A$.

TRUE FALSE

CATALOGUE

Third part, open questions

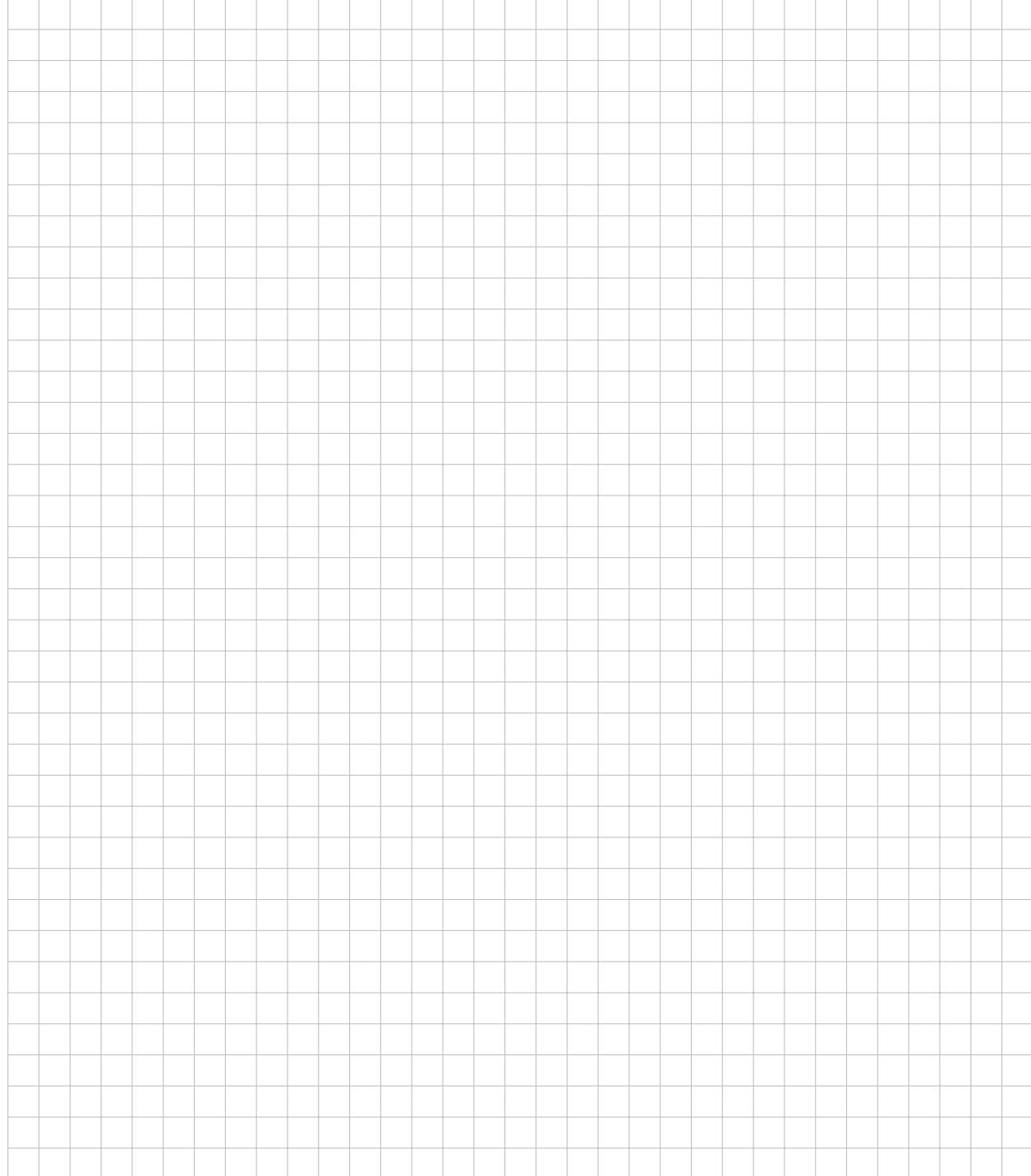
Answer in the empty space below. Your answer should be carefully justified, and all the steps of your argument should be discussed in details. Leave the check-boxes empty, they are used for the grading.

Question 6: *This question is worth 8 points.*

<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input checked="" type="checkbox"/> 8
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We remind you that ...

Determine ...



A large grid of squares, approximately 20 columns by 20 rows, intended for the student's handwritten answer to Question 6. The grid is composed of thin black lines on a white background.

CATALOGUE



CATALOGUE

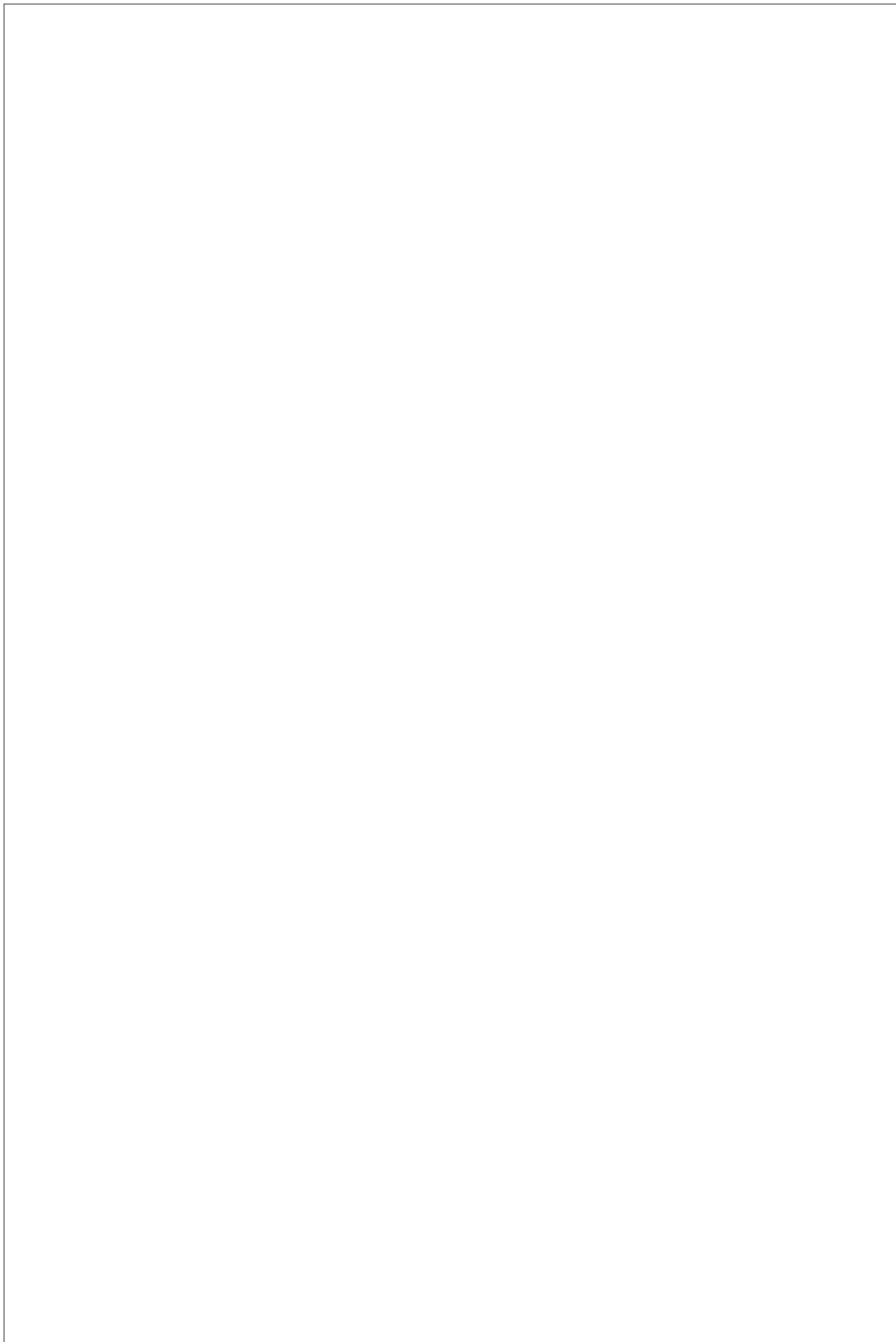
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We remind you that ...

Determine ...

CATALOGUE



Teacher : **TEACHER**
 EXAM - MT
 DATE
 DURATION

A-2

Student 2

SCIPER: **999001**Room: **R-A**

Signature:

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CATALOGUE

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TRUE FALSE

CATALOGUE

Third part, open questions

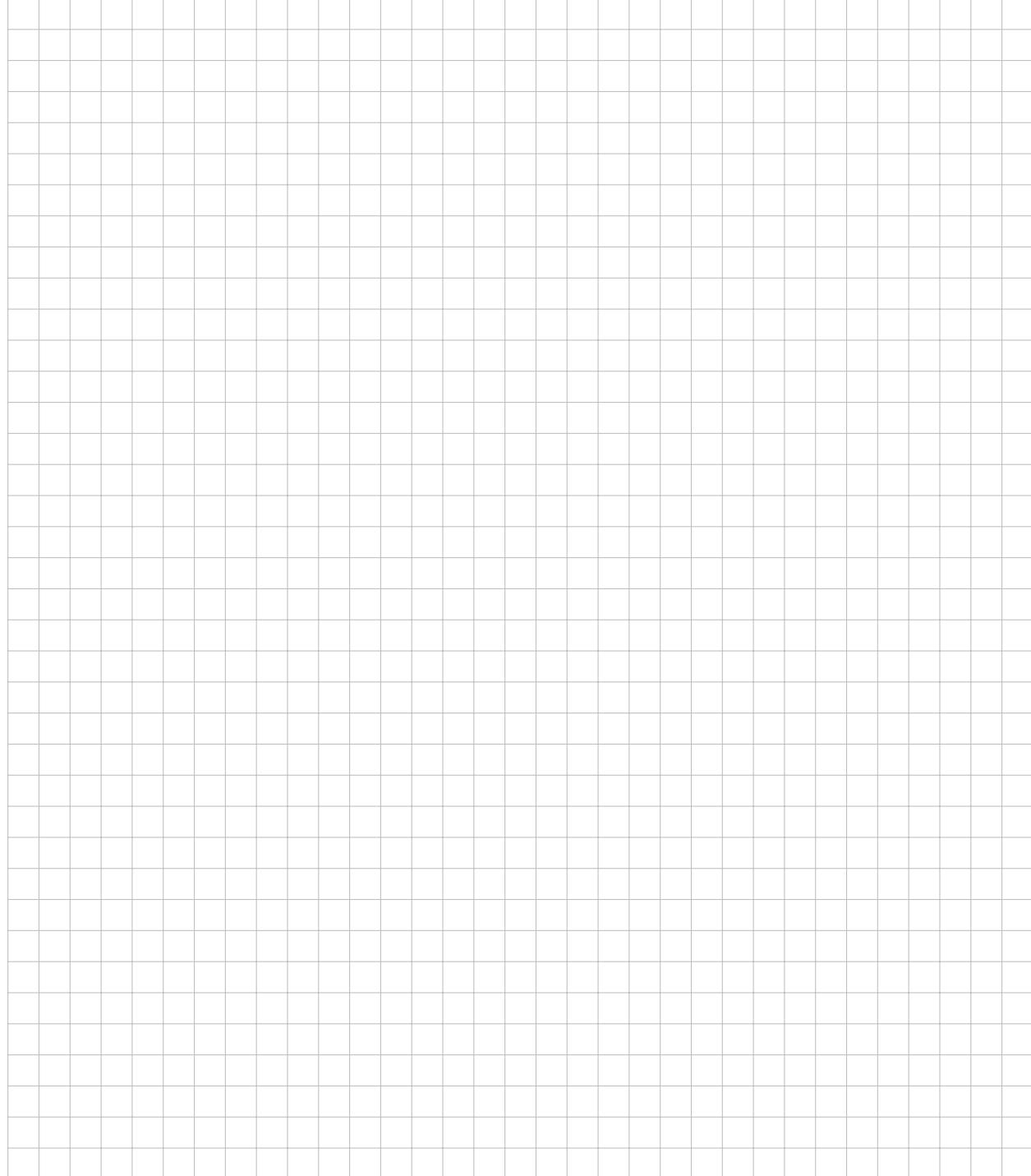
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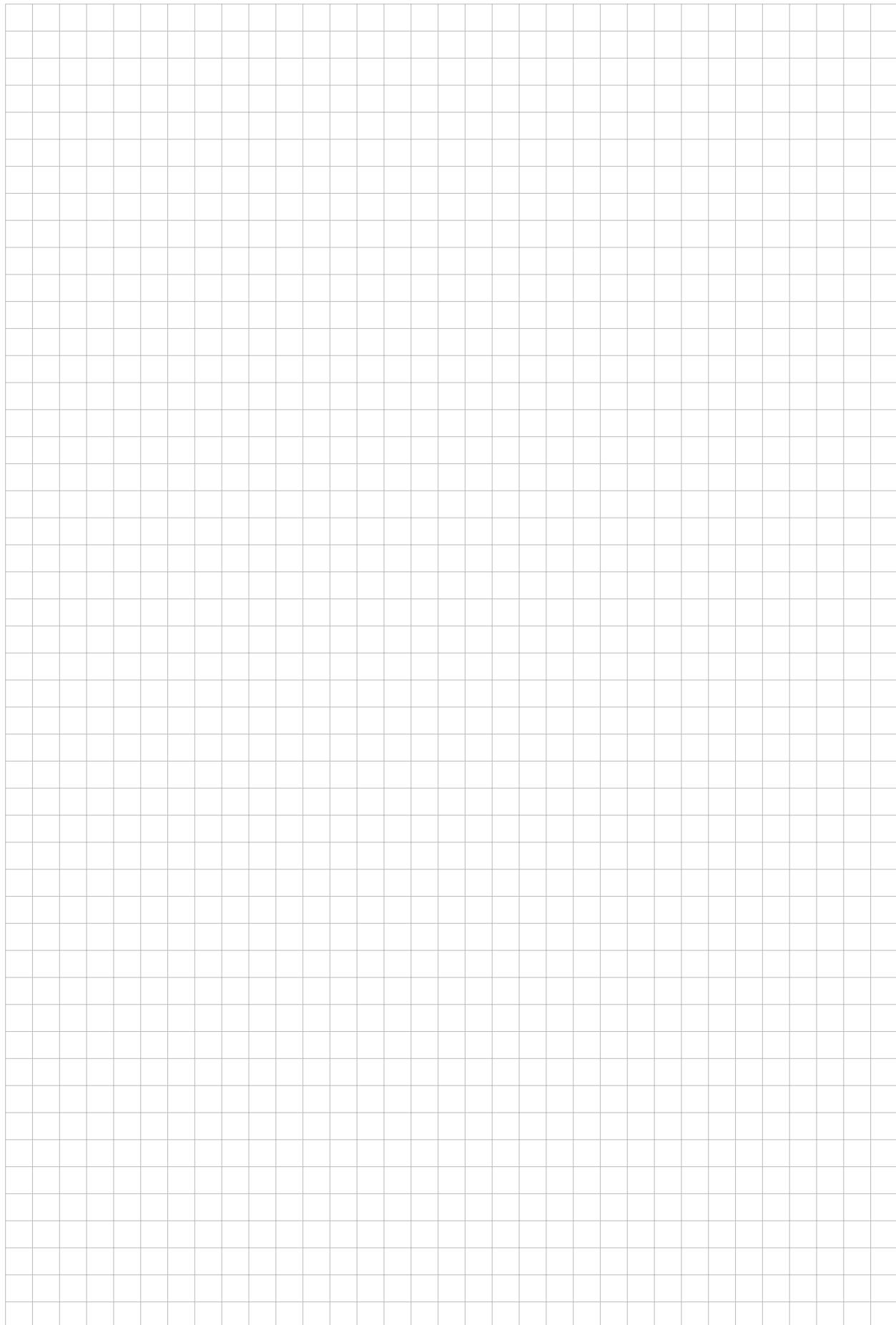
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CATALOGUE



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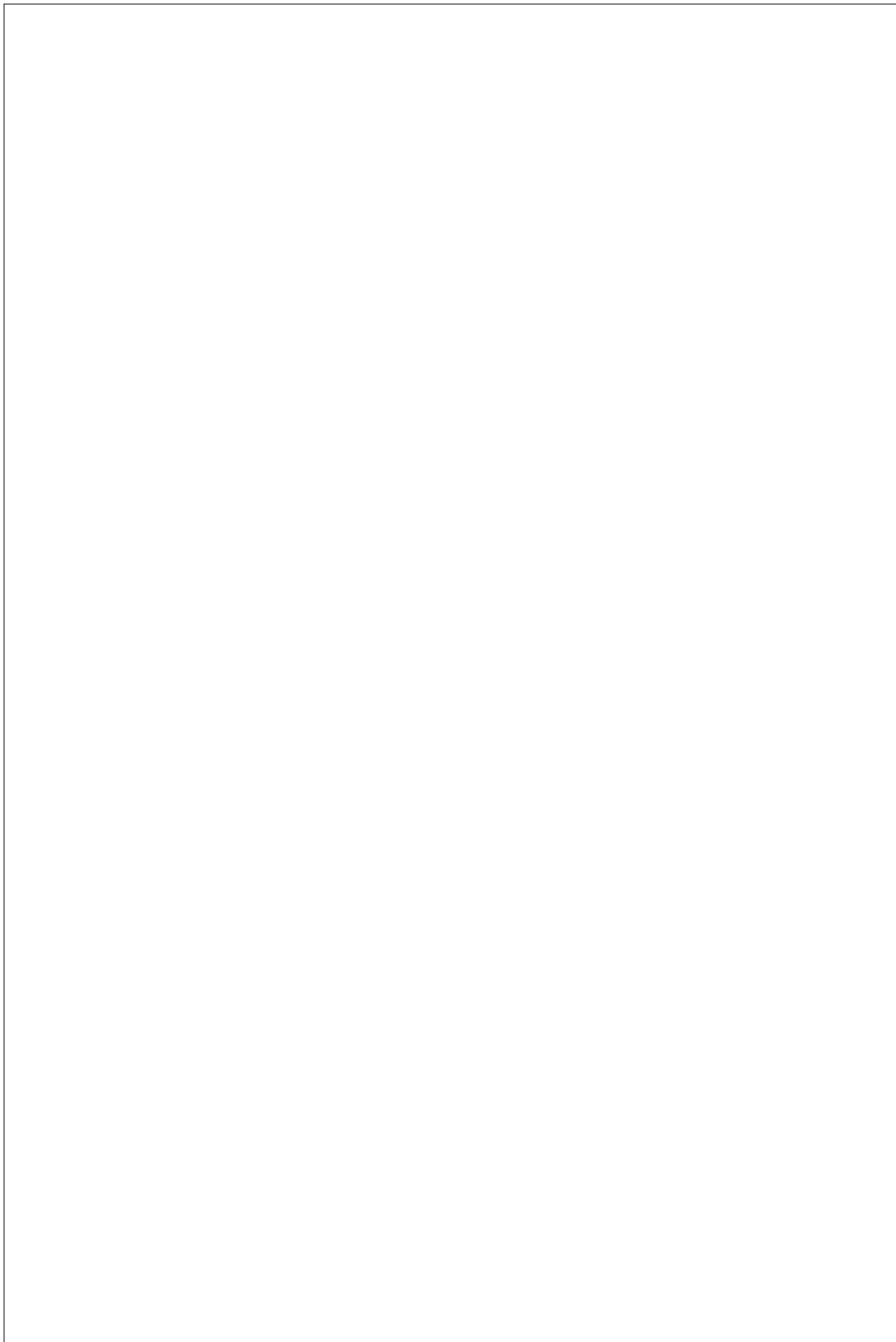
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Determine ...

CATALOGUE



Teacher : **TEACHER**
 EXAM - SV
 DATE
 DURATION

A-3

Student 3

SCIPER: **999002**Room: **R-A**

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CATALOGUE

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Question statement with several possible correct answers

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TRUE FALSE

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TRUE FALSE

CATALOGUE

Third part, open questions

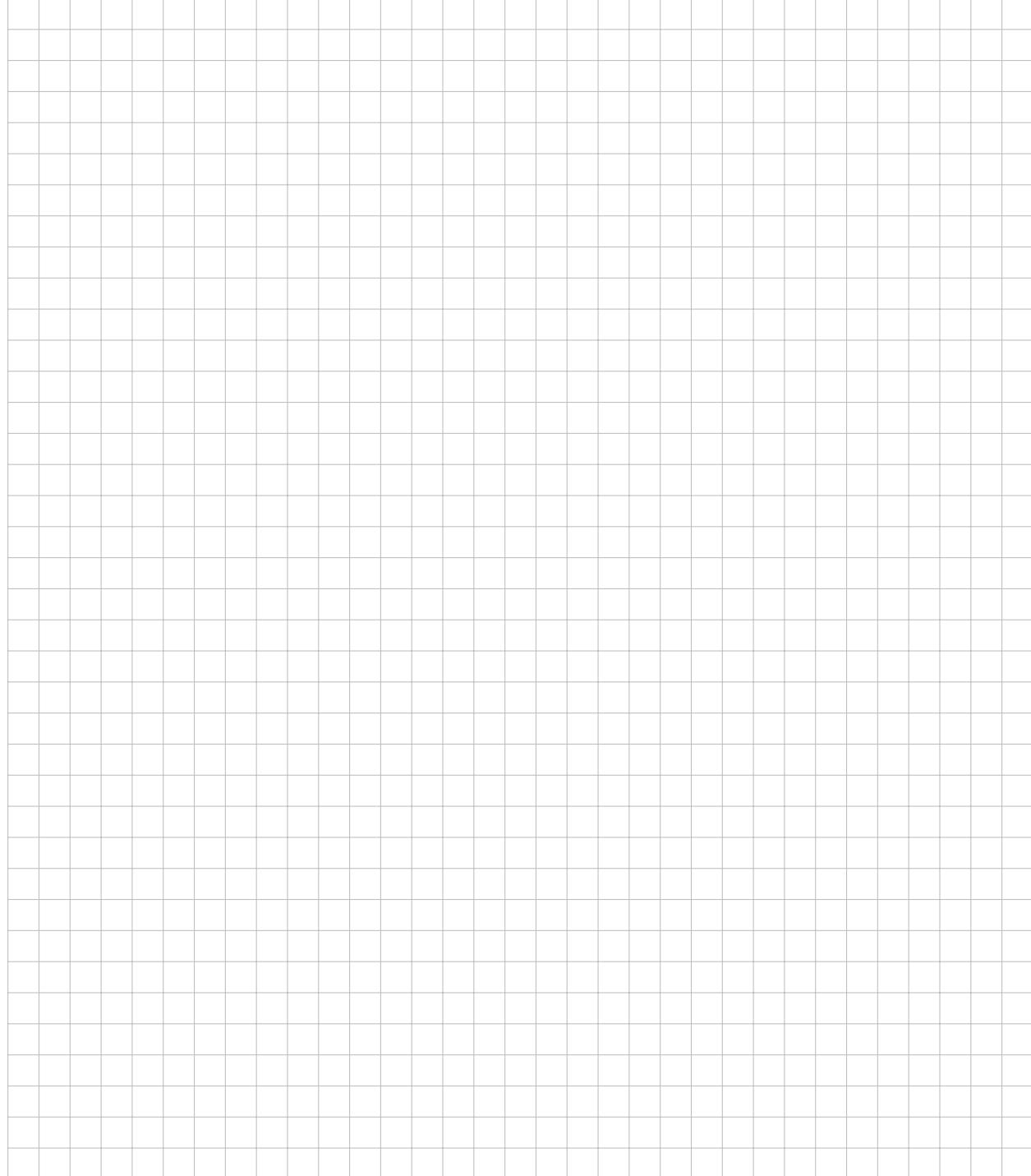
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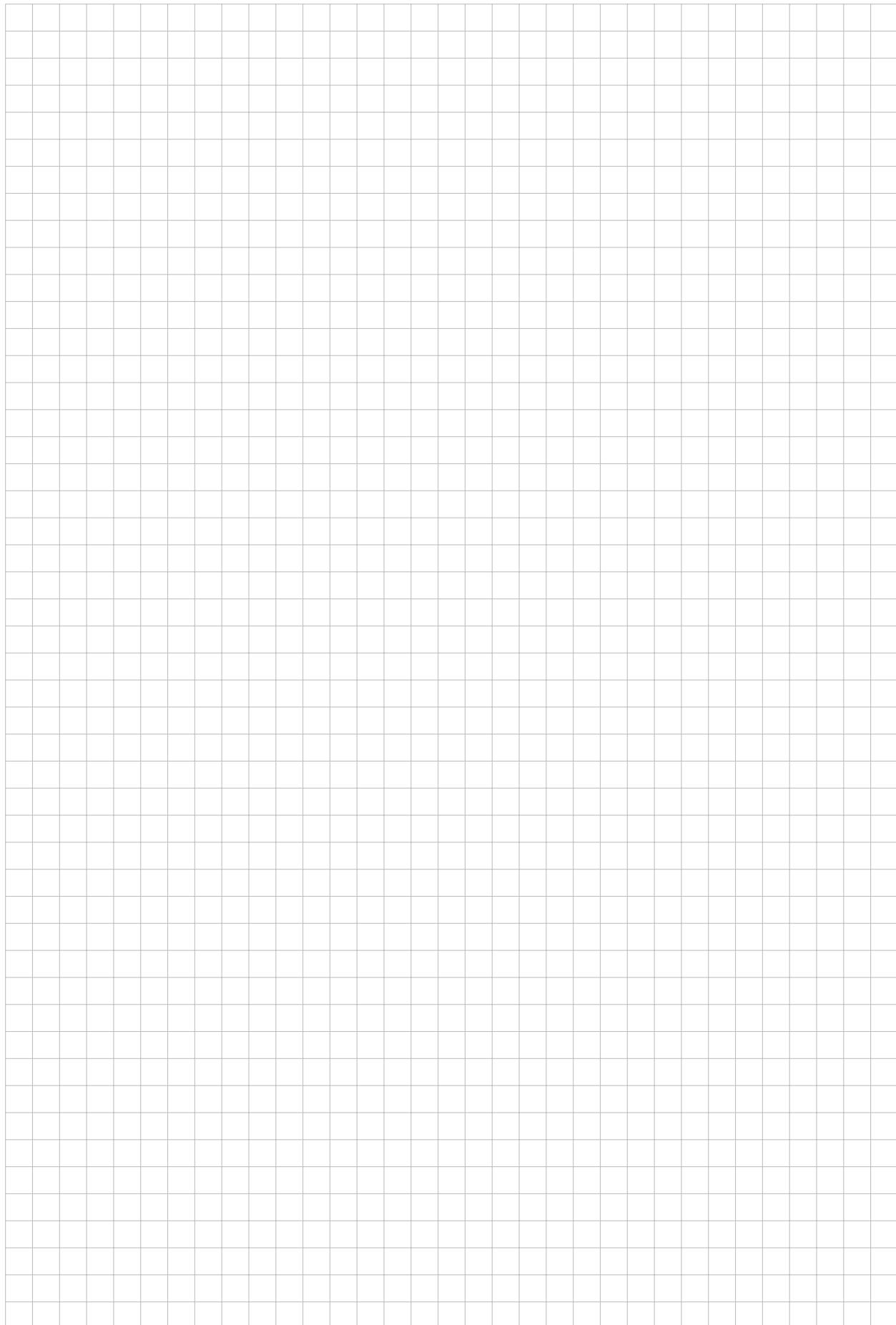
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CATALOGUE



CATALOGUE

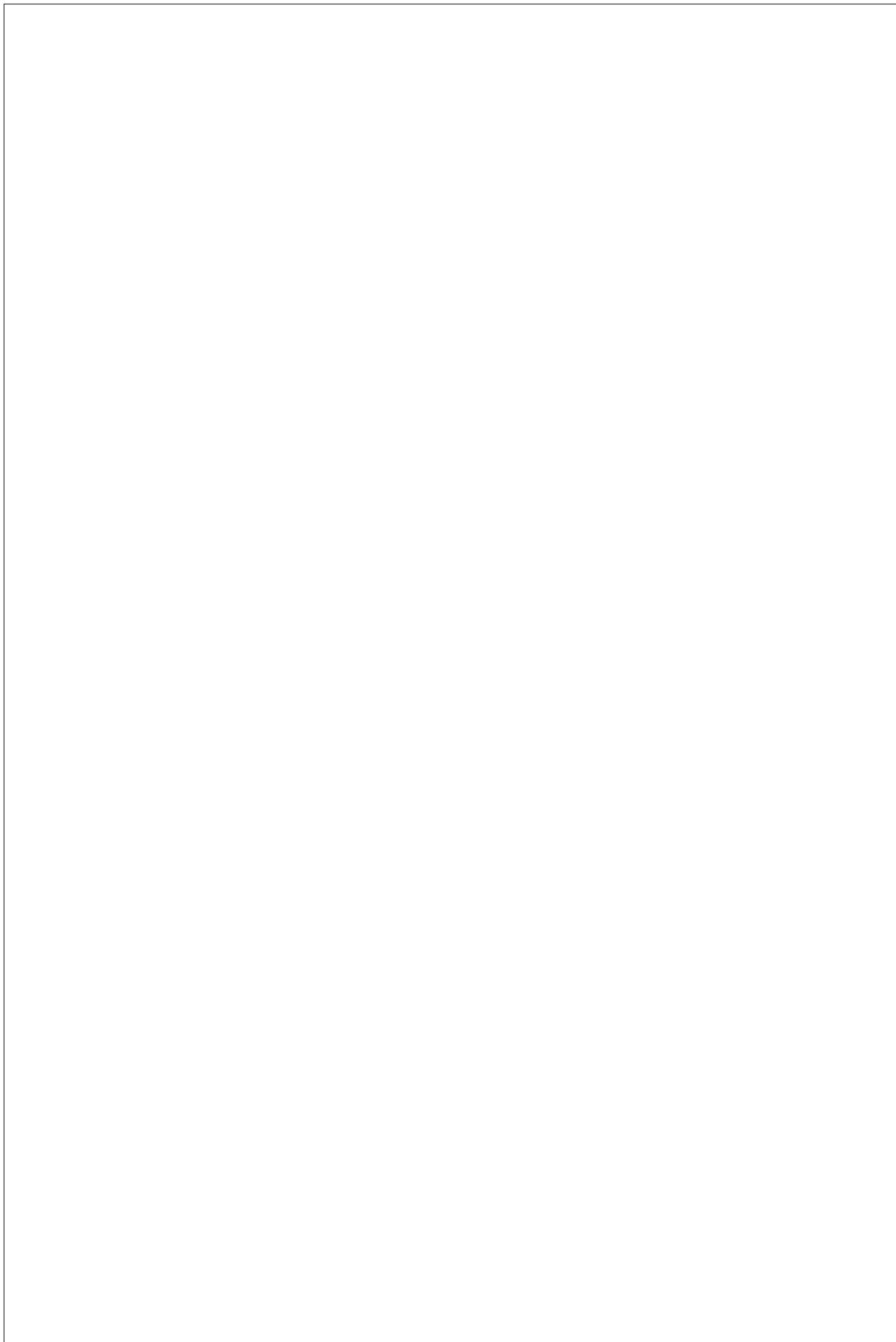
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We remind you that ...

Determine ...

CATALOGUE



Teacher : **TEACHER**
 EXAM - -
 DATE
 DURATION

B-1

Student 4

SCIPER: **999003**Room: **R-B**

Signature:

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Question statement with several possible correct answers

- | | |
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TRUE FALSE

CATALOGUE

Third part, open questions

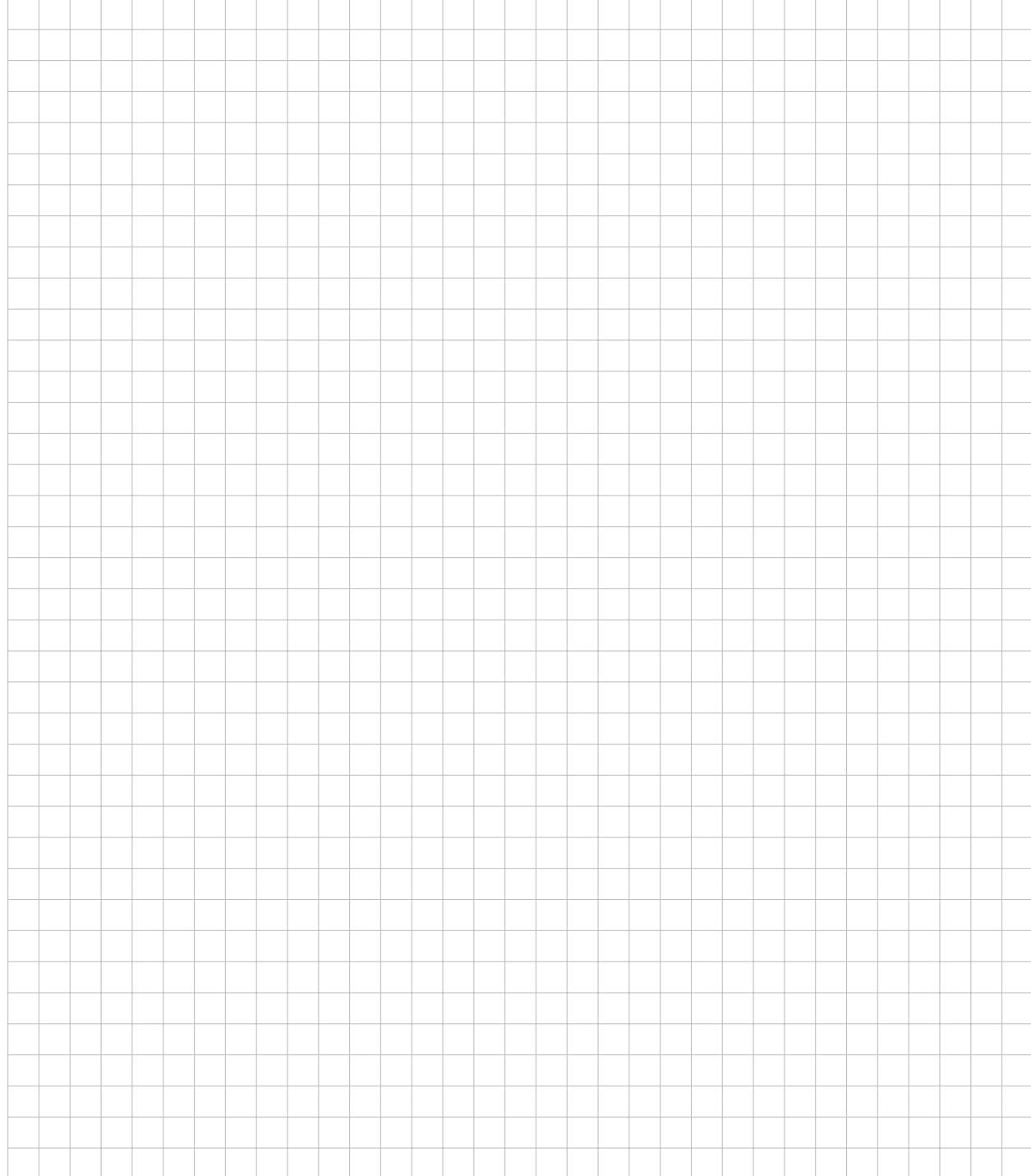
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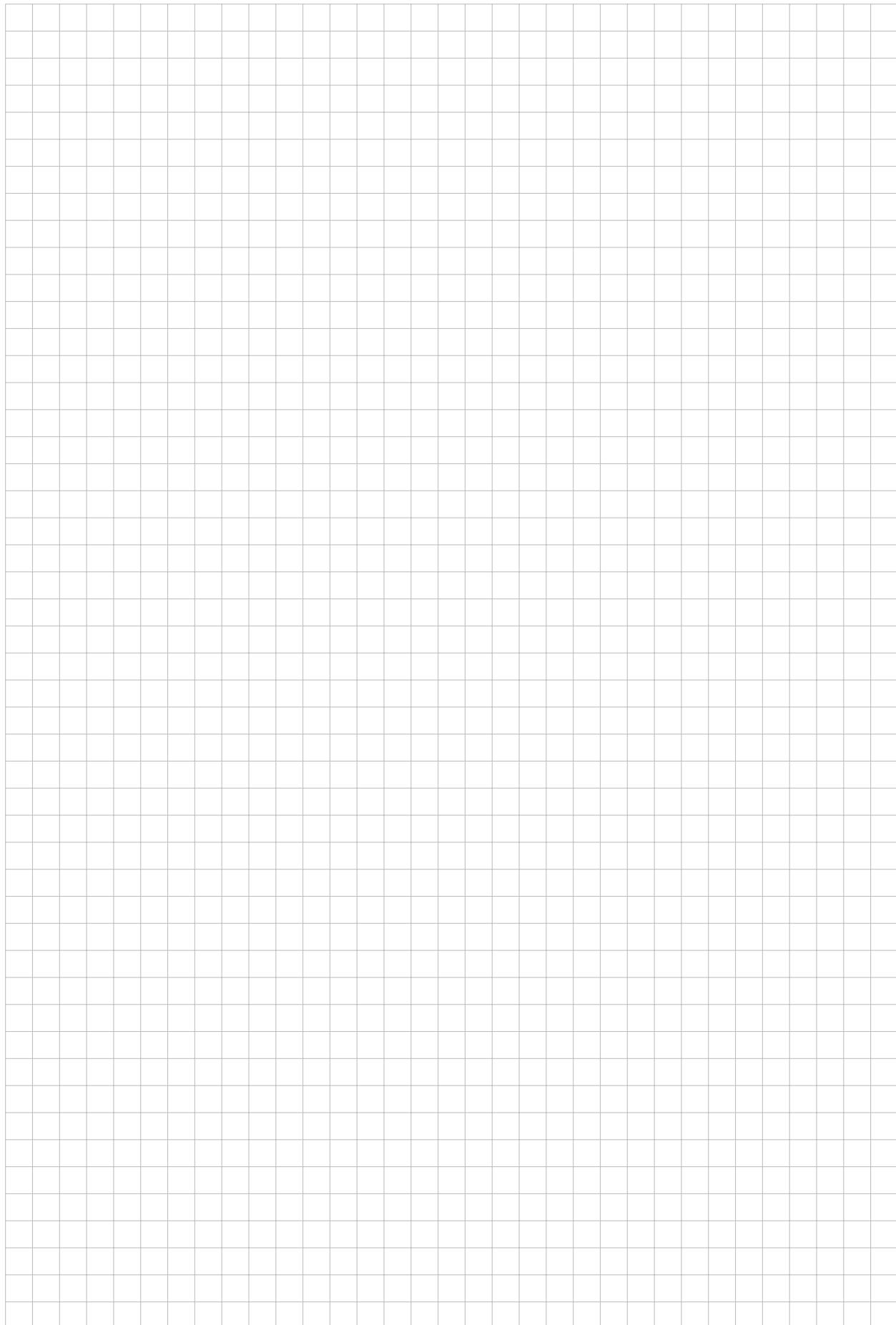
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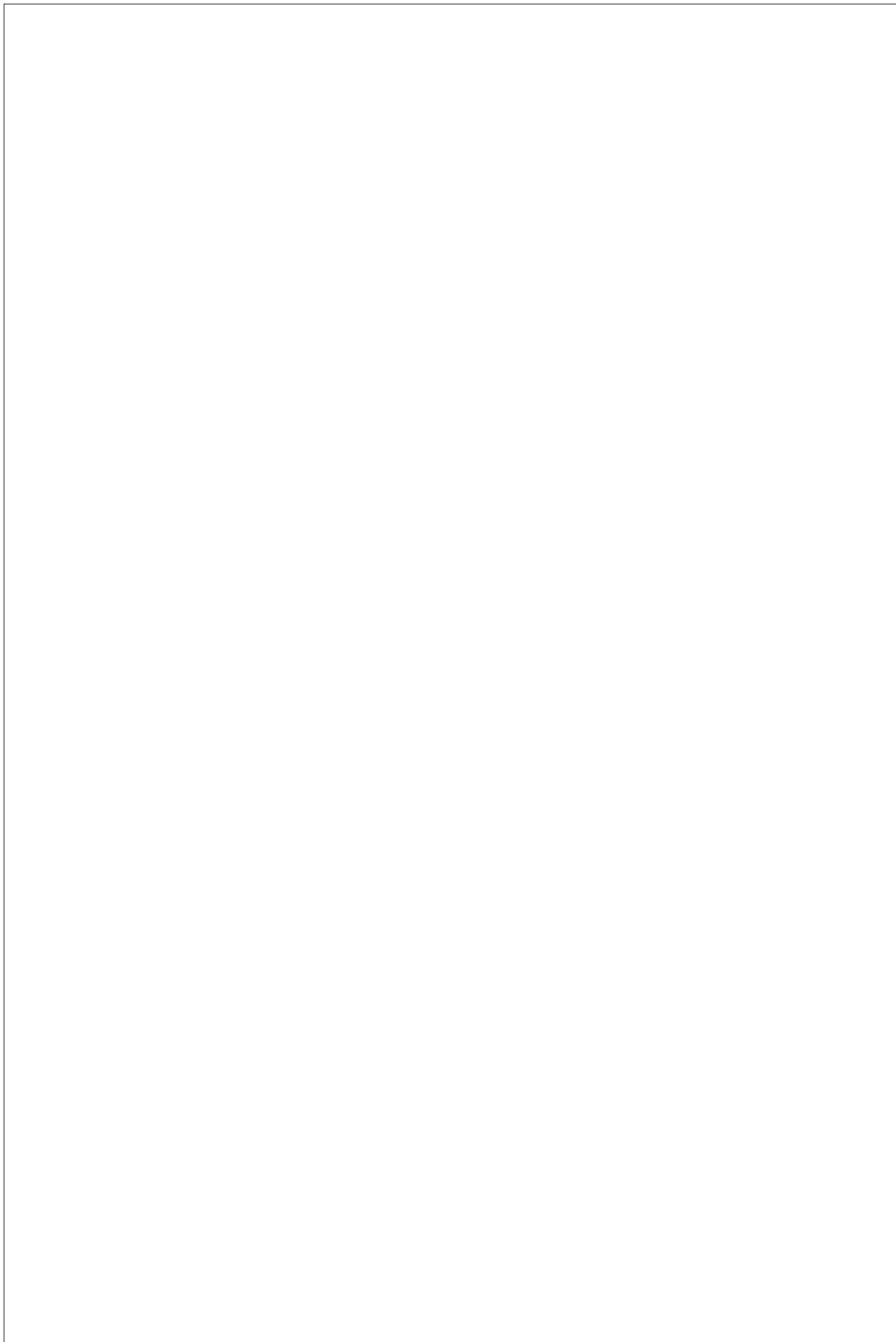
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Determine ...

CATALOGUE



Teacher : **TEACHER**
 EXAM - -
 DATE
 DURATION

B-2

Student 5

SCIPER: **999004**Room: **R-B**

Signature:

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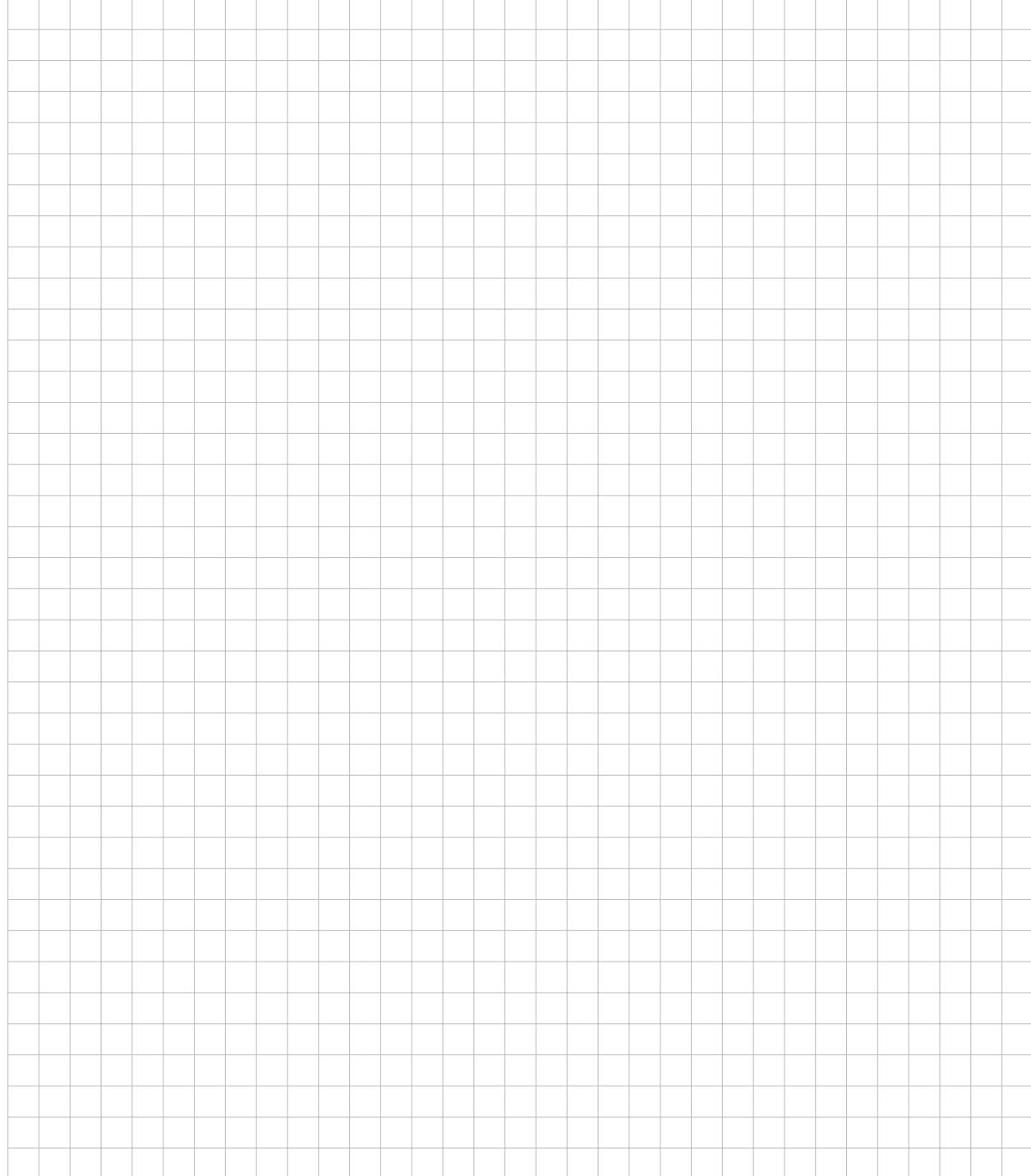
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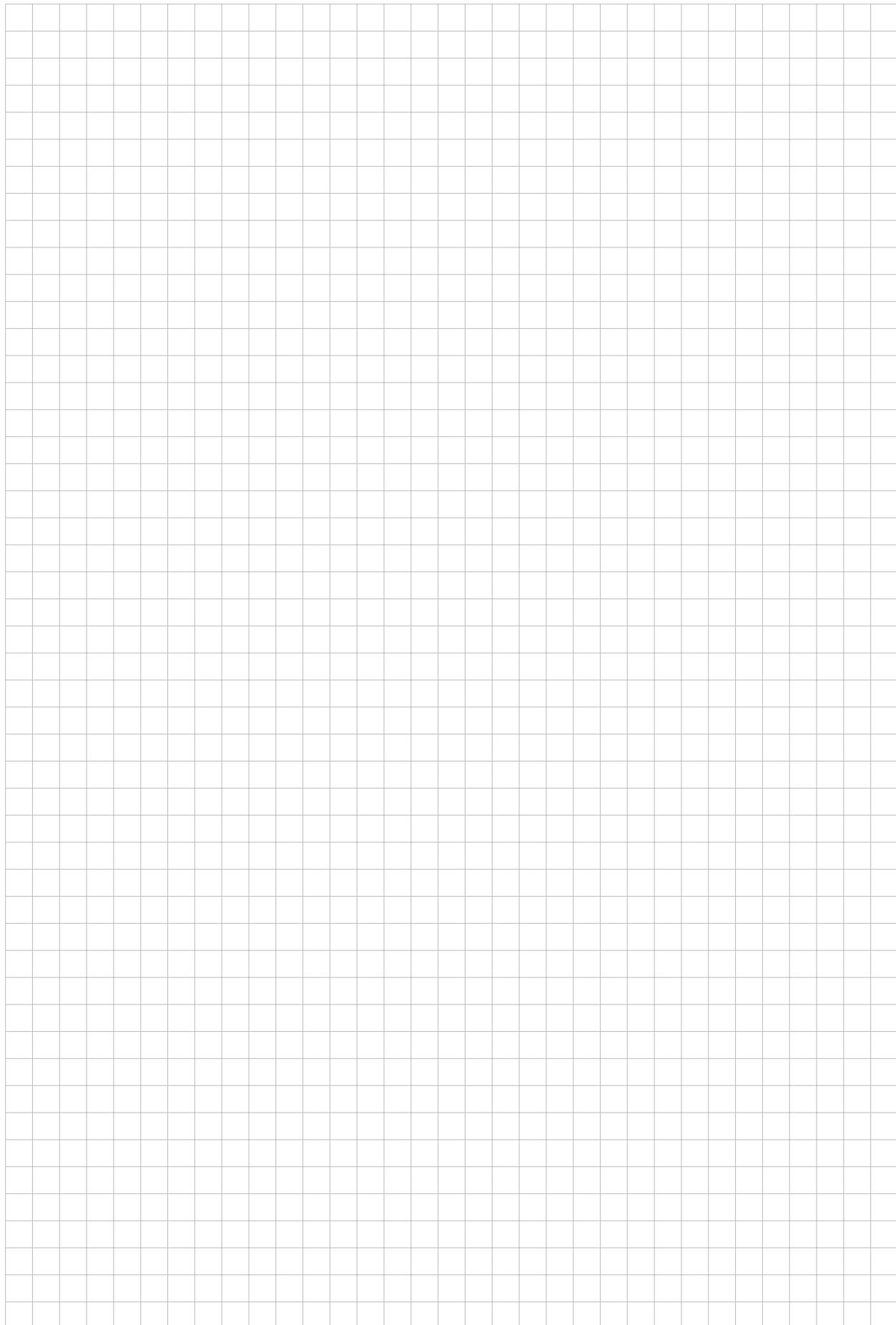
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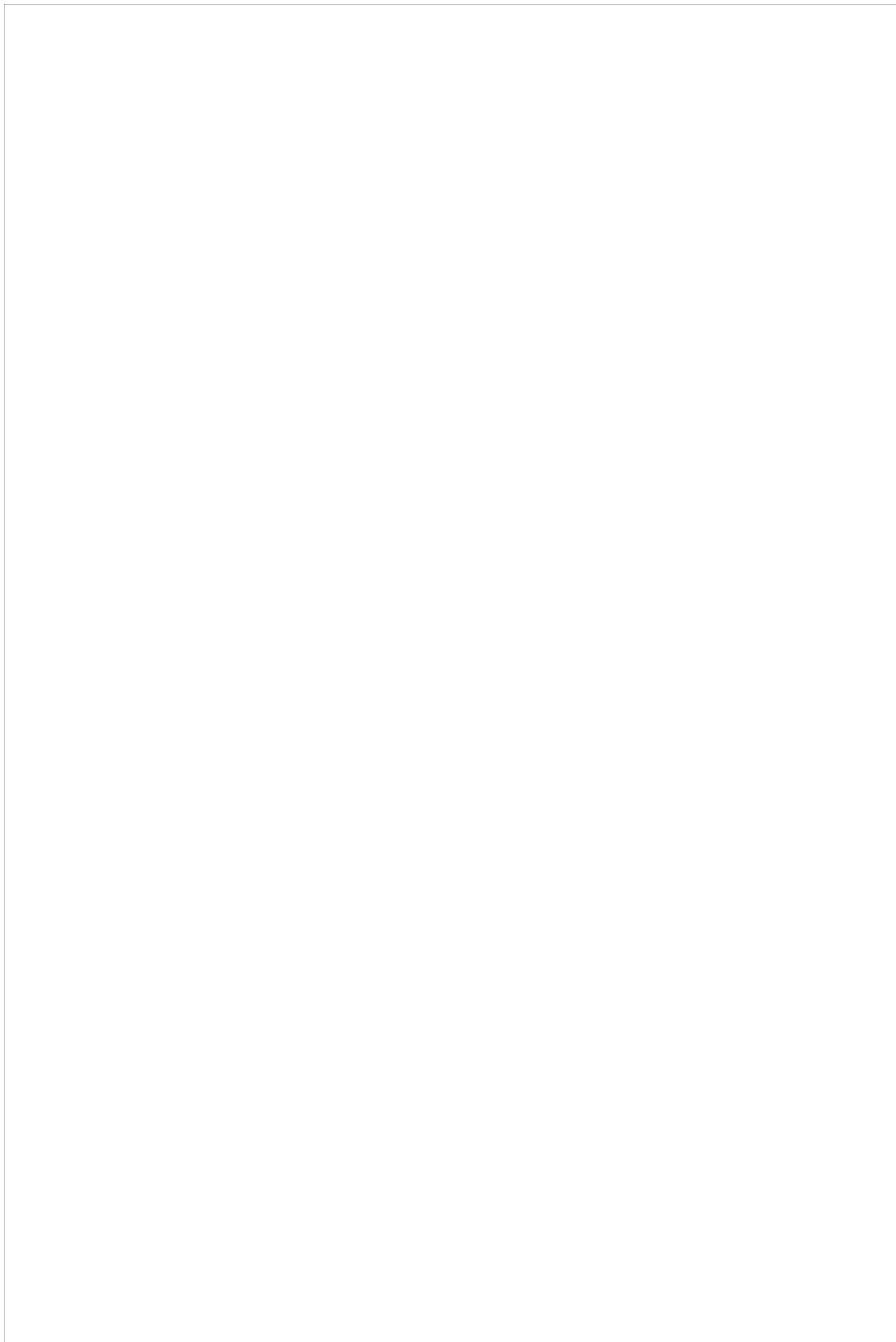
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Teacher : **TEACHER**
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B-3

Student 6

SCIPER: **999005**Room: **R-B**

Signature:

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TRUE FALSE

Let A be a bounded and non empty subset of \mathbb{R} .

Then $\inf A \in A$ and $\sup A \in A$.

TRUE FALSE

CATALOGUE

Third part, open questions

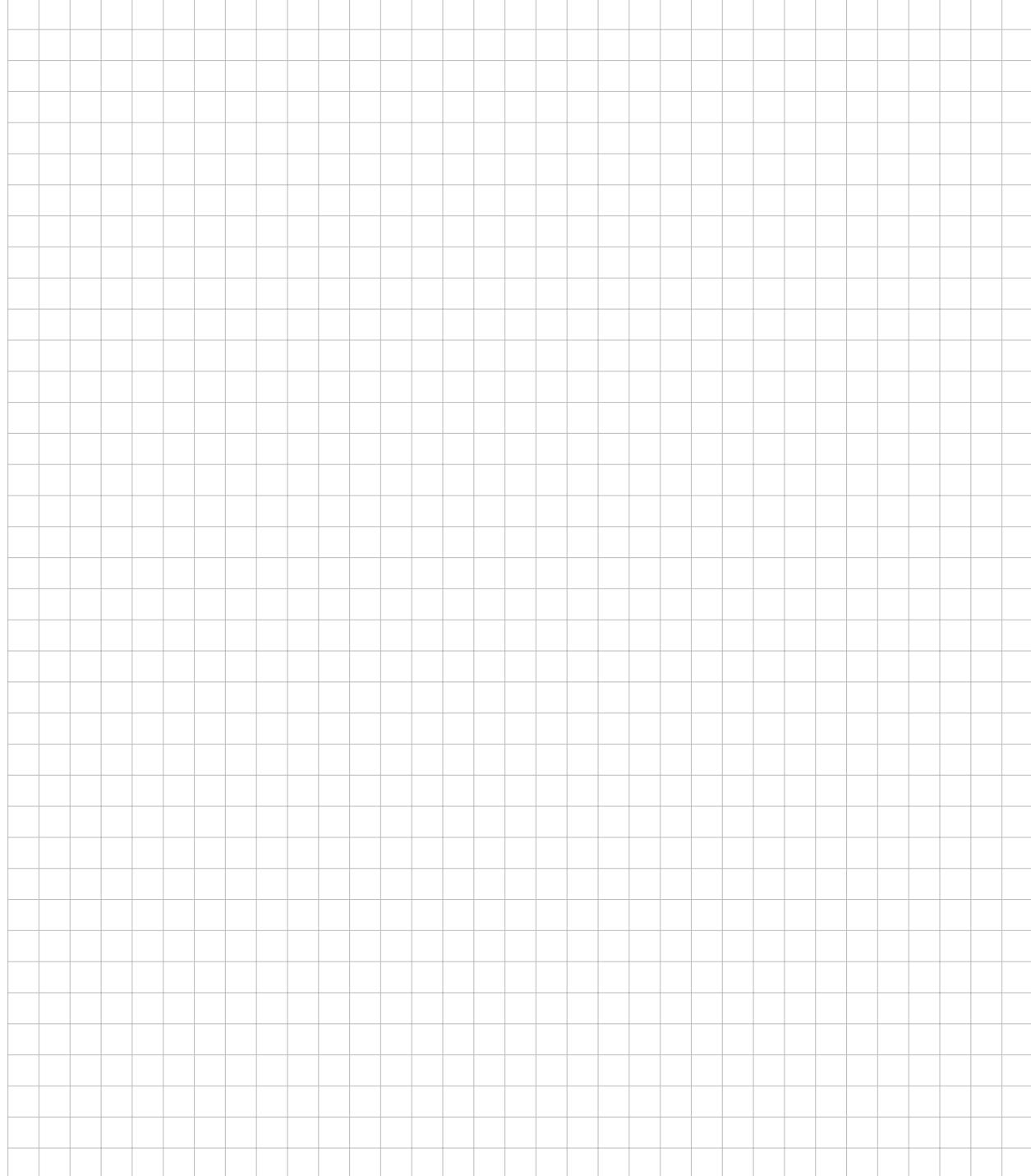
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Question 6: *This question is worth 8 points.*

<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input checked="" type="checkbox"/> 8
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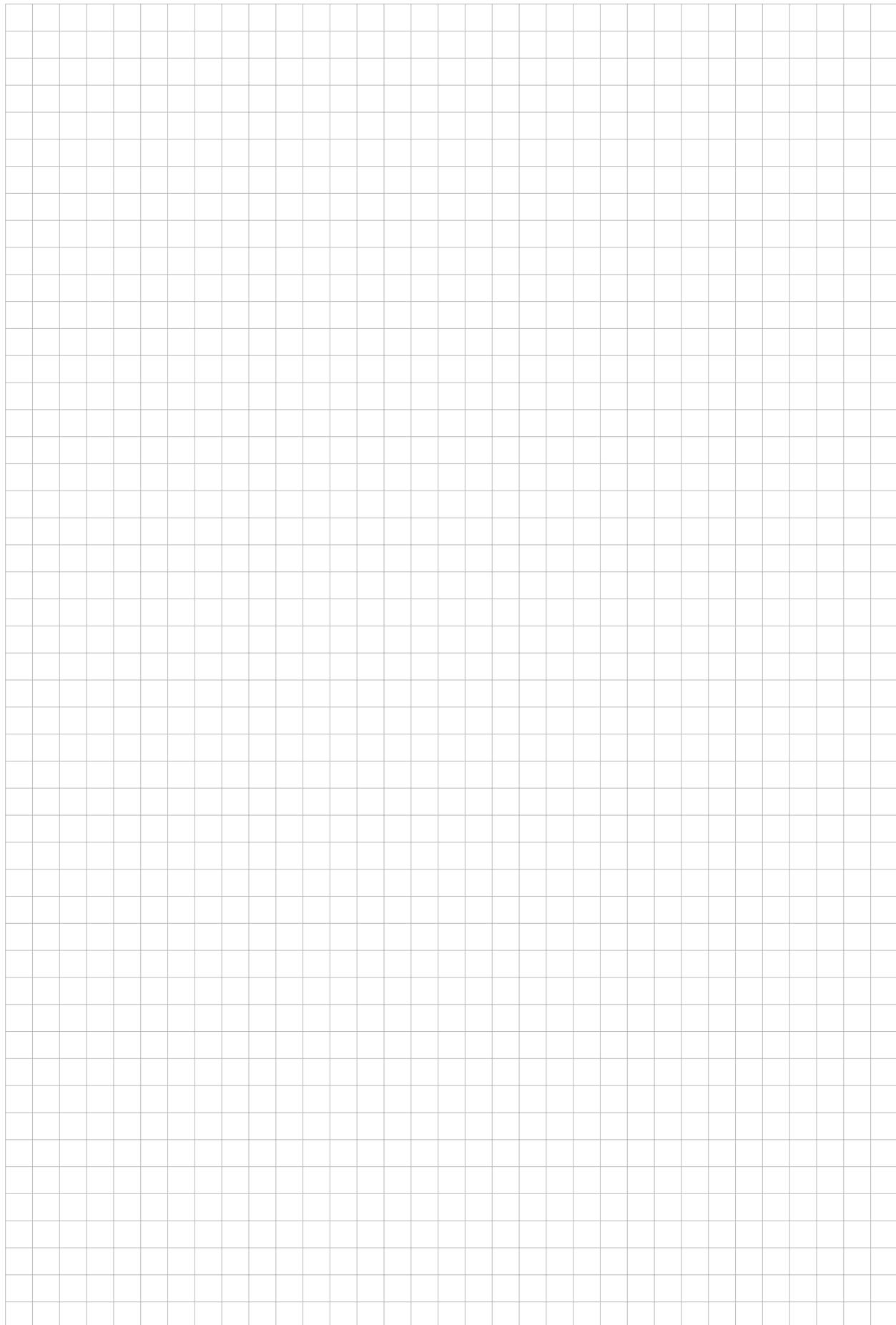
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Determine ...



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CATALOGUE



CATALOGUE

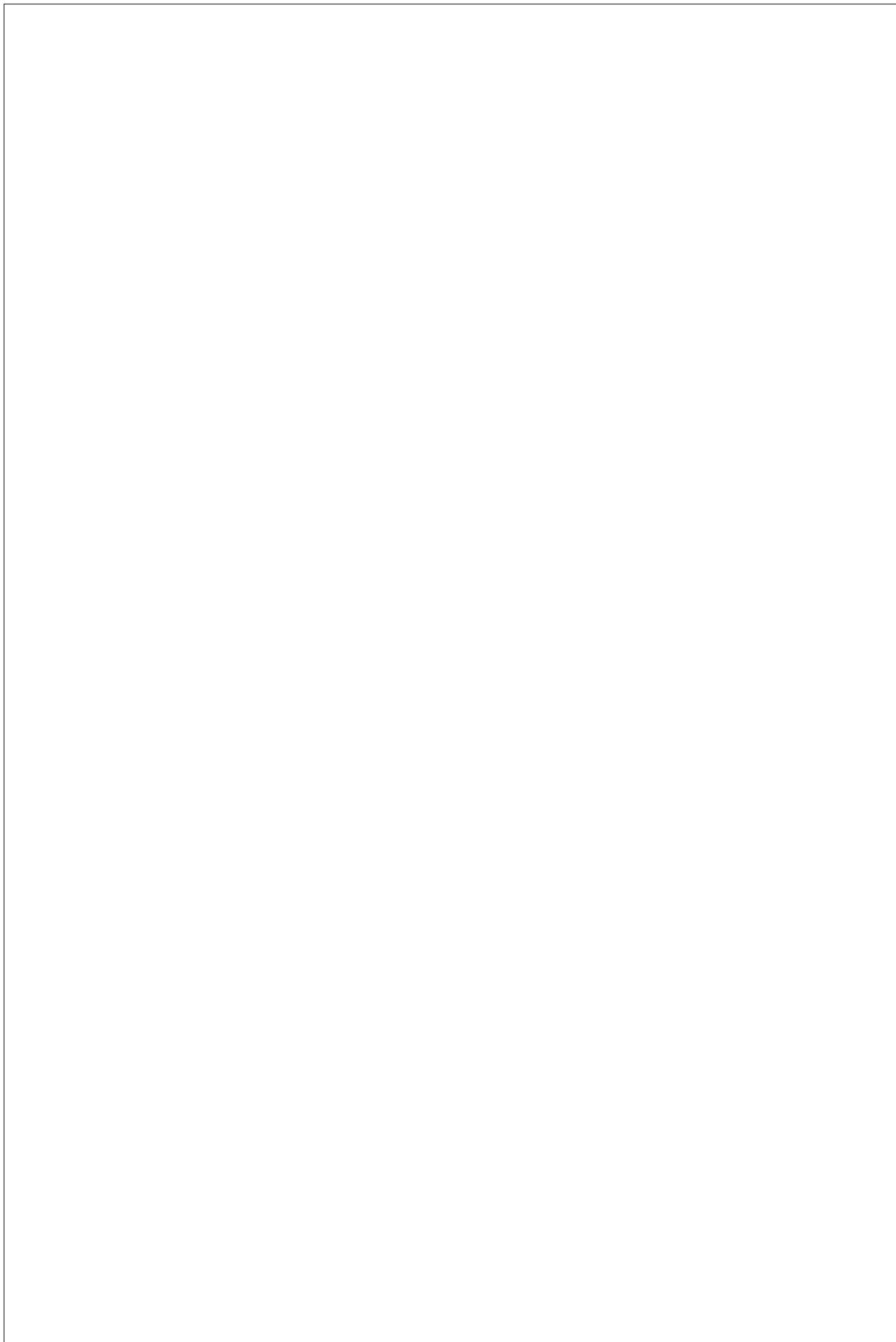
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<input type="checkbox"/> 0	<input type="checkbox"/> .5	<input type="checkbox"/> 1	<input type="checkbox"/> 1.5	<input checked="" type="checkbox"/> 2
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We remind you that ...

Determine ...

CATALOGUE



Teacher : **TEACHER**

EXAM - MT

DATE

DURATION

B-4

Student 7

SCIPER: **999006**Room: **R-B**

Signature:

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choisir une réponse select an answer Antwort auswählen	ne PAS choisir une réponse NOT select an answer NICHT Antwort auswählen	Corriger une réponse Correct an answer Antwort korrigieren			
  		 			
ce qu'il ne faut PAS faire what should NOT be done was man NICHT tun sollte					
     					

CATALOGUE

First part: multiple choice questions

For each question, mark the box corresponding to the correct answer. Each question has **exactly one** correct answer.

Let the subset $E \subset \mathbb{R}$ defined by $E = \left\{ 2 \left(1 + \frac{1}{n} \right)^n : n \in \mathbb{N} \setminus \{0\} \right\}$.

Then

- 10 is a majorant of E
- the minimum of E is 2
- E is closed
- the supremum of E belongs to E

Question statement with one possible correct answer

- Correct Answer Choice
- False Answer Choice
- False Answer Choice
- False Answer Choice

Question statement with several possible correct answers

- | | |
|---|--|
| <input checked="" type="checkbox"/> Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
| <input checked="" type="checkbox"/> Other Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
| <input type="checkbox"/> False Answer Choice | <input type="checkbox"/> False Answer Choice |

Question statement with several possible correct answers

- | | |
|---|--|
| <input checked="" type="checkbox"/> Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
| <input checked="" type="checkbox"/> Other Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
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CATALOGUE

First part: multiple choice questions

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TRUE FALSE

Let A be a bounded and non empty subset of \mathbb{R} .

Then $\inf A \in A$ and $\sup A \in A$.

TRUE FALSE

CATALOGUE

Third part, open questions

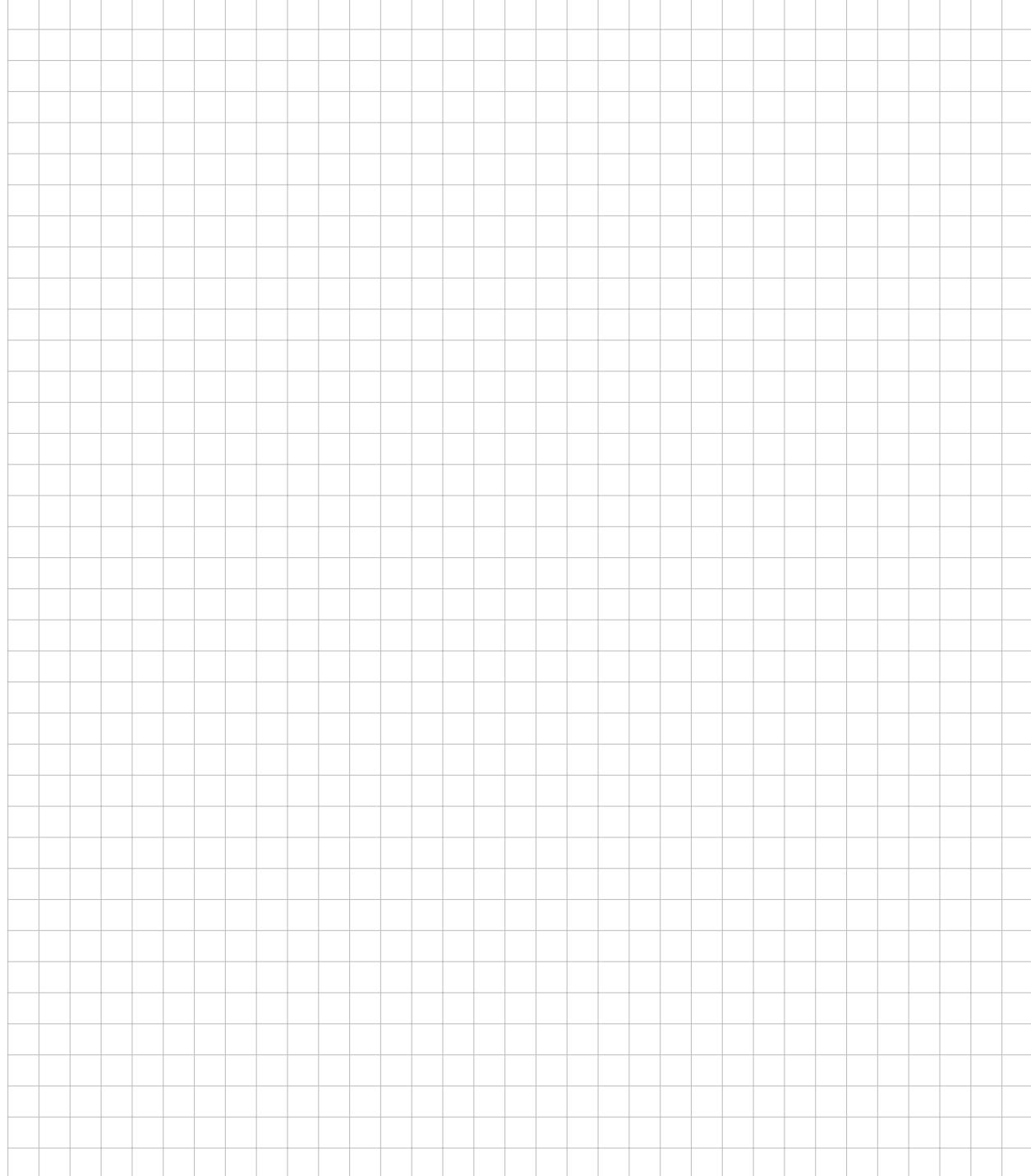
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Question 6: *This question is worth 8 points.*

<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input checked="" type="checkbox"/> 8
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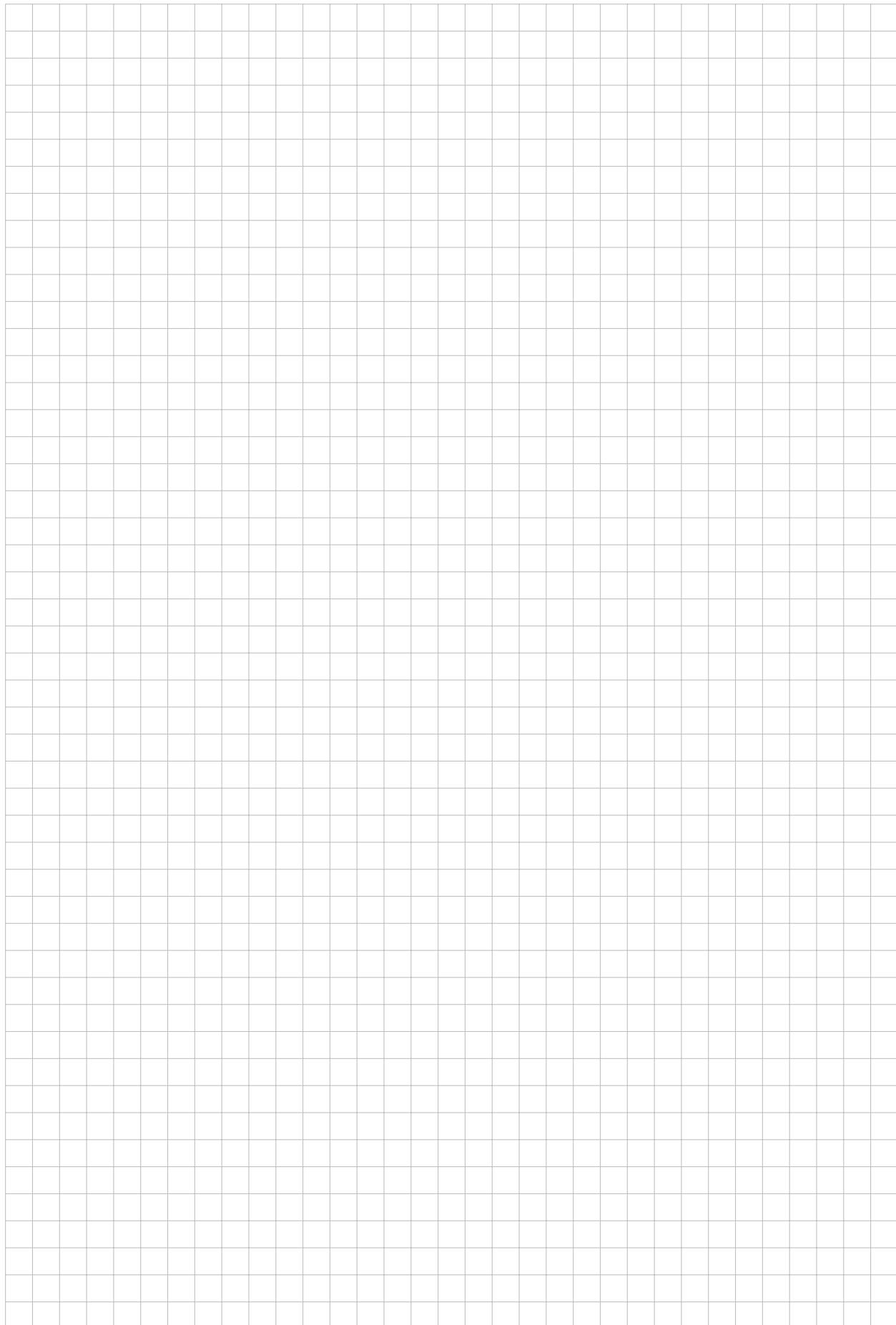
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CATALOGUE



CATALOGUE

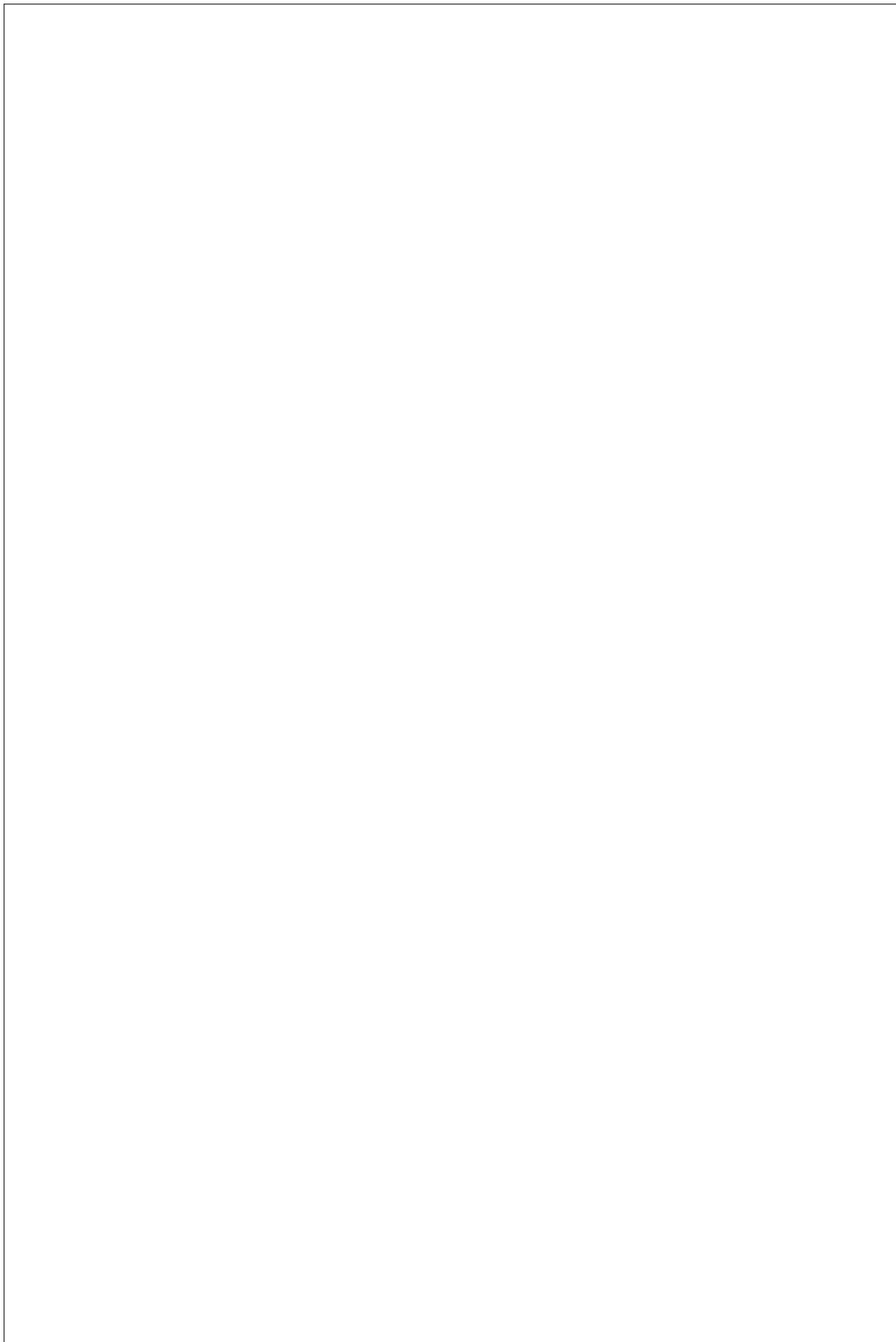
Question 7: *This question is worth 2 points.*

<input type="checkbox"/> 0	<input type="checkbox"/> .5	<input type="checkbox"/> 1	<input type="checkbox"/> 1.5	<input checked="" type="checkbox"/> 2
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We remind you that ...

Determine ...

CATALOGUE



Teacher : **TEACHER**
****EXAM** - SV
****DATE**
****DURATION********

B-5

Student 8

SCIPER: **999007**Room: **R-B**

Signature:

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ce qu'il ne faut PAS faire what should NOT be done was man NICHT tun sollte					
     					

CATALOGUE

First part: multiple choice questions

For each question, mark the box corresponding to the correct answer. Each question has **exactly one** correct answer.

Let the subset $E \subset \mathbb{R}$ defined by $E = \left\{ 2 \left(1 + \frac{1}{n} \right)^n : n \in \mathbb{N} \setminus \{0\} \right\}$.

Then

- 10 is a majorant of E
- the minimum of E is 2
- E is closed
- the supremum of E belongs to E

Question statement with one possible correct answer

- Correct Answer Choice
- False Answer Choice
- False Answer Choice
- False Answer Choice

Question statement with several possible correct answers

- | | |
|---|--|
| <input checked="" type="checkbox"/> Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
| <input checked="" type="checkbox"/> Other Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
| <input type="checkbox"/> False Answer Choice | <input type="checkbox"/> False Answer Choice |

Question statement with several possible correct answers

- | | |
|---|--|
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CATALOGUE

First part: multiple choice questions

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TRUE FALSE

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TRUE FALSE

CATALOGUE

Third part, open questions

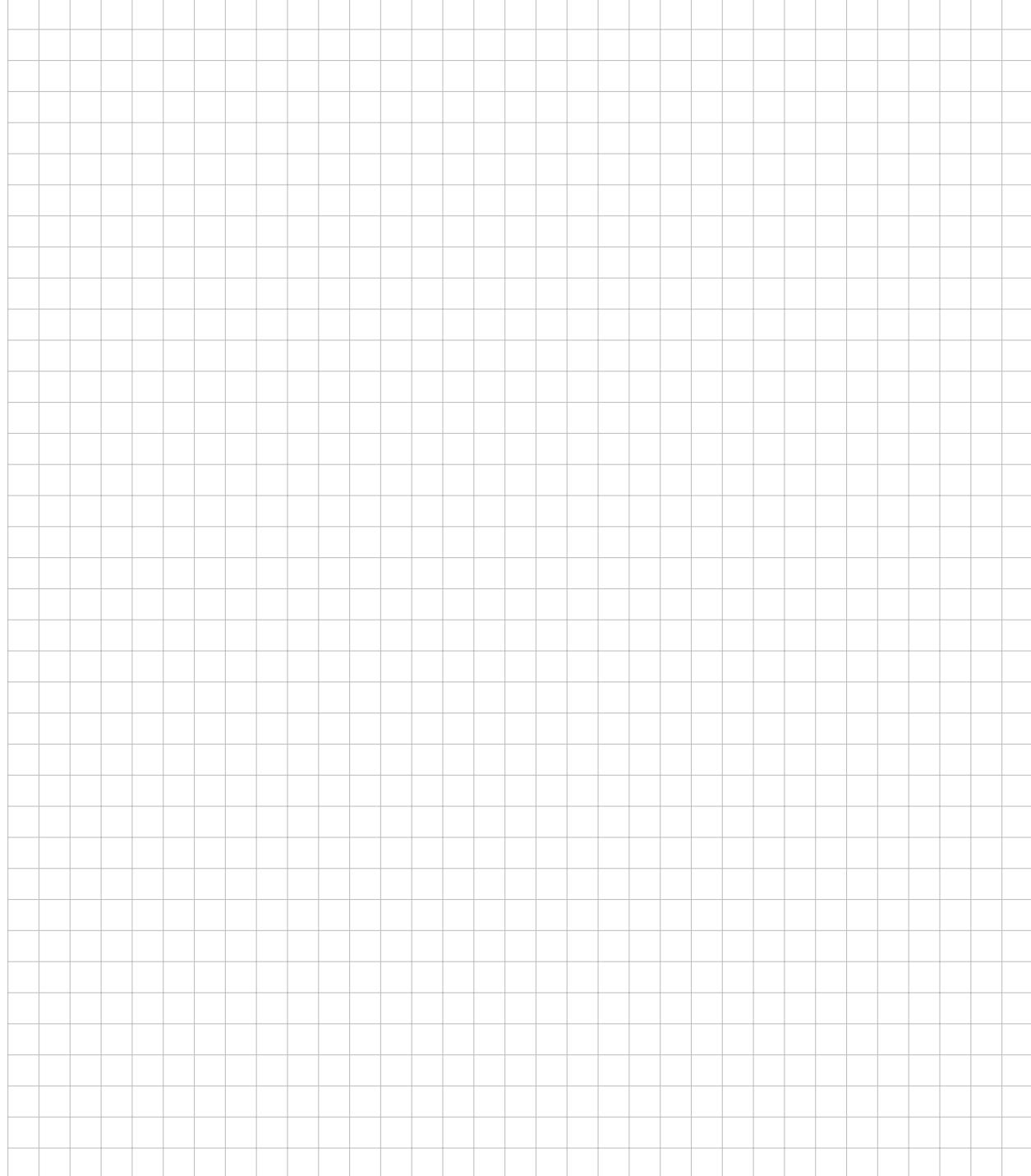
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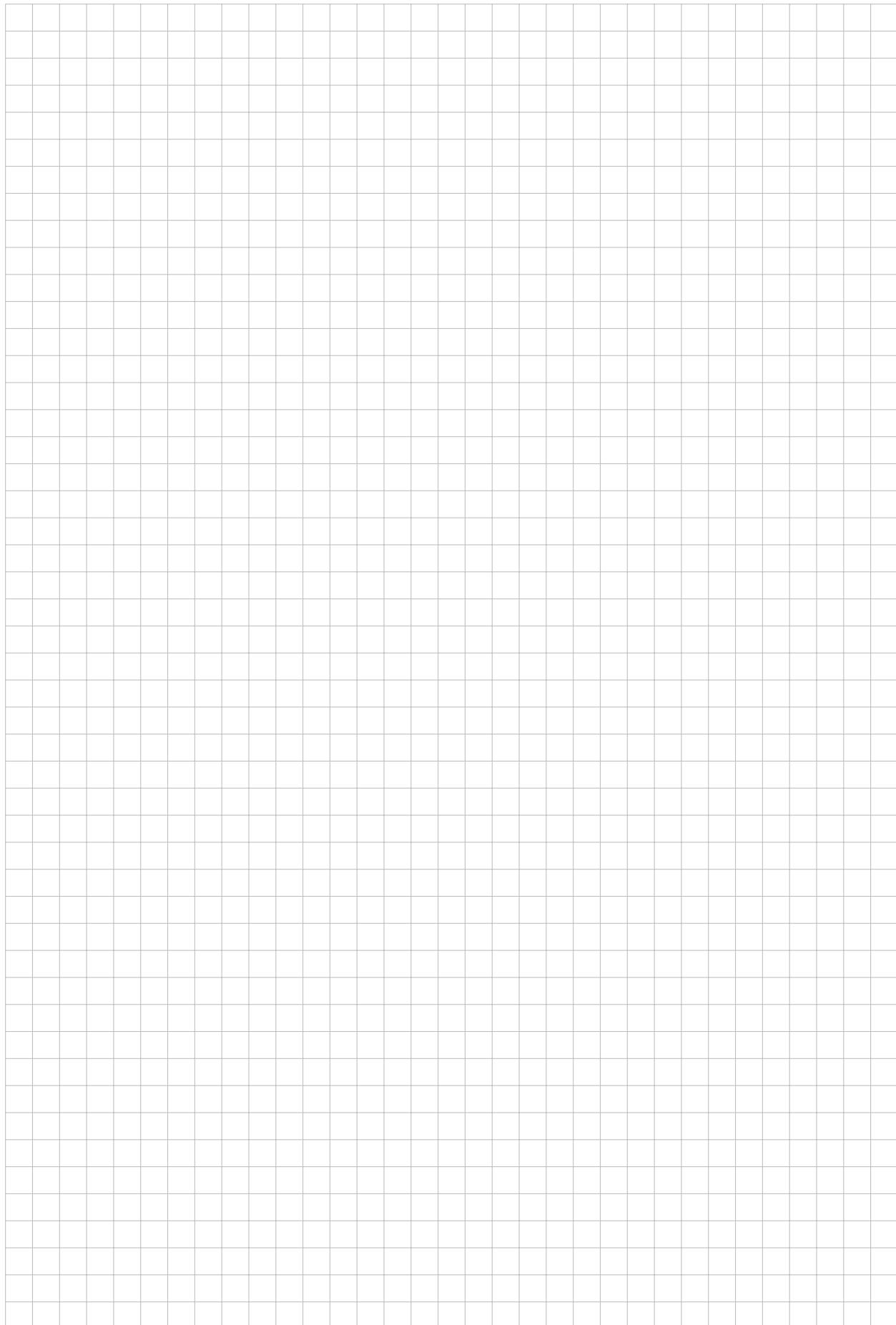
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Determine ...



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CATALOGUE



CATALOGUE

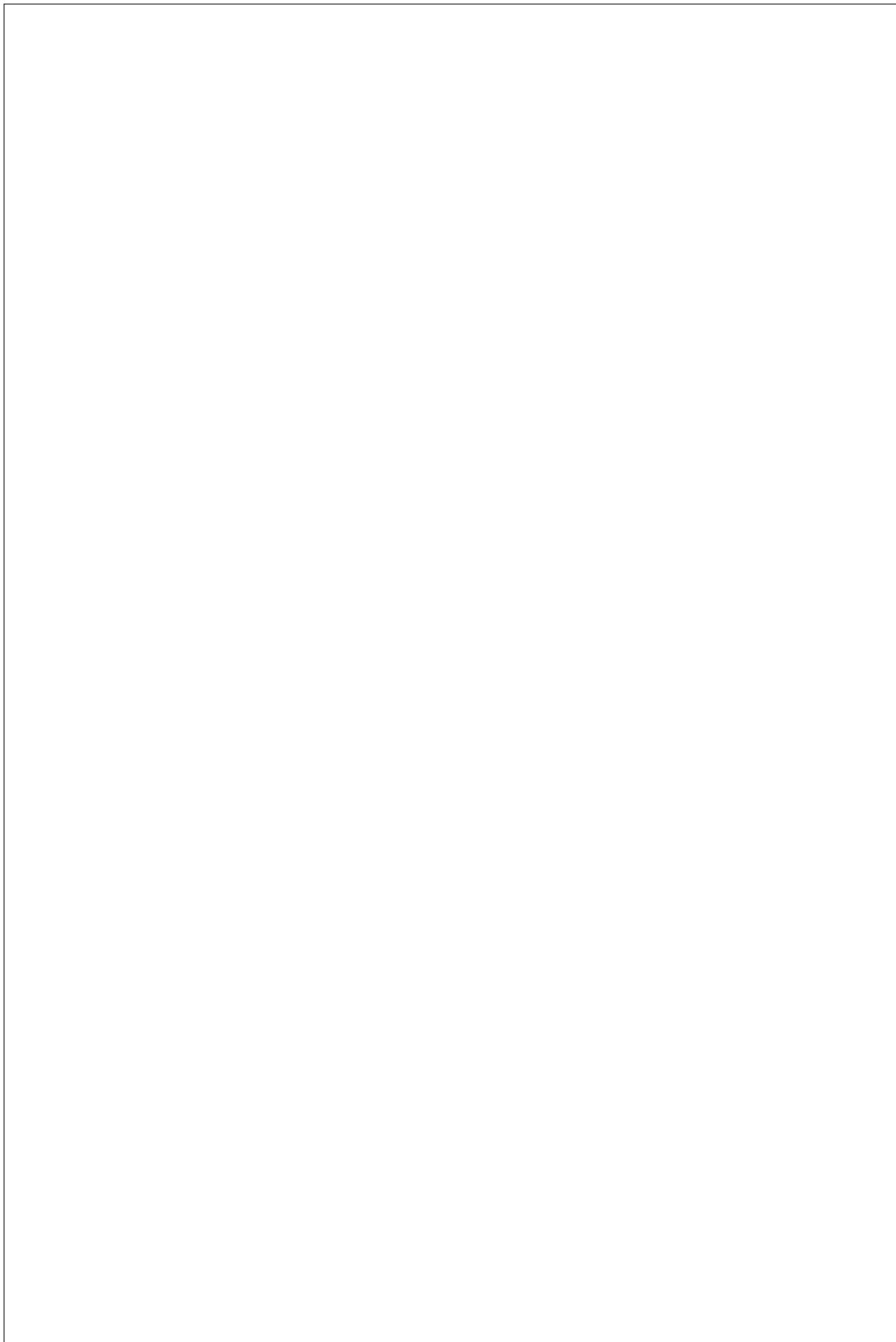
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<input type="checkbox"/> 0	<input type="checkbox"/> .5	<input type="checkbox"/> 1	<input type="checkbox"/> 1.5	<input checked="" type="checkbox"/> 2
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We remind you that ...

Determine ...

CATALOGUE



Teacher : **TEACHER**
 EXAM - -
 DATE
 DURATION

B-6

Student 9

SCIPER: **999008**Room: **R-B**

Signature:

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CATALOGUE

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Question statement with one possible correct answer

- Correct Answer Choice
- False Answer Choice
- False Answer Choice
- False Answer Choice

Question statement with several possible correct answers

- | | |
|---|--|
| <input checked="" type="checkbox"/> Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
| <input checked="" type="checkbox"/> Other Correct Answer Choice | <input type="checkbox"/> False Answer Choice |
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Question statement with several possible correct answers

- | | |
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CATALOGUE

First part: multiple choice questions

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TRUE FALSE

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TRUE FALSE

CATALOGUE

Third part, open questions

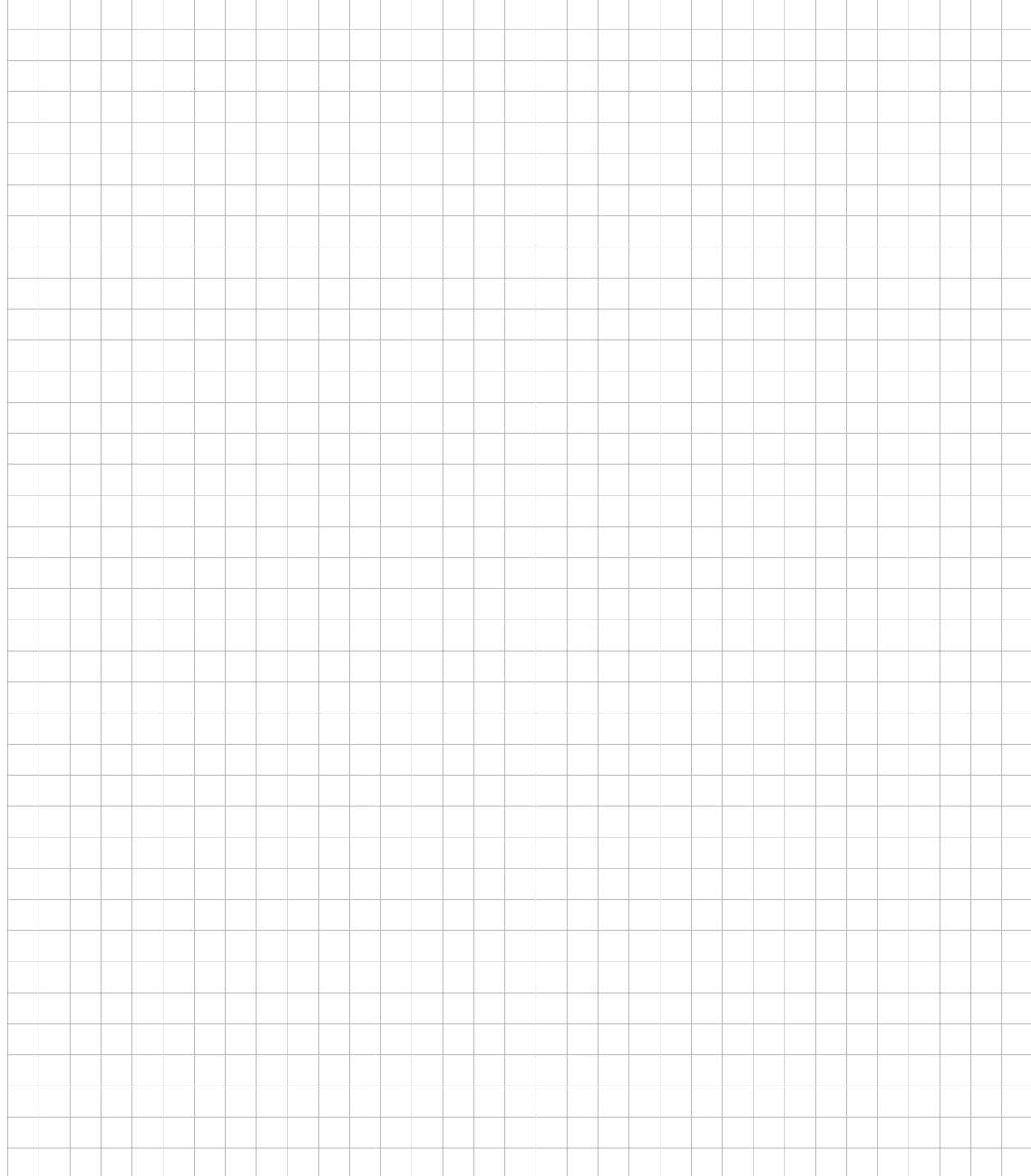
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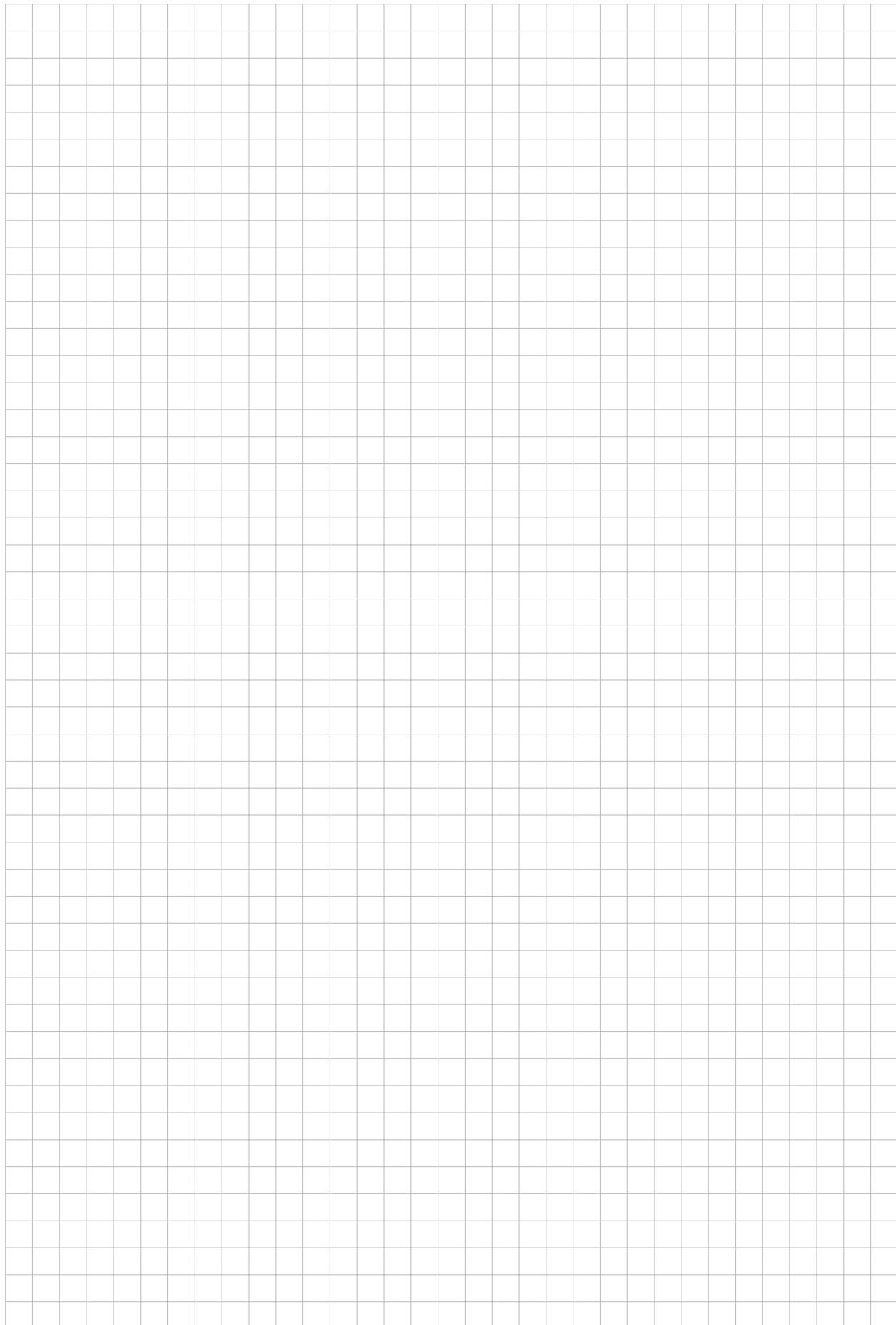
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Determine ...



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CATALOGUE



CATALOGUE

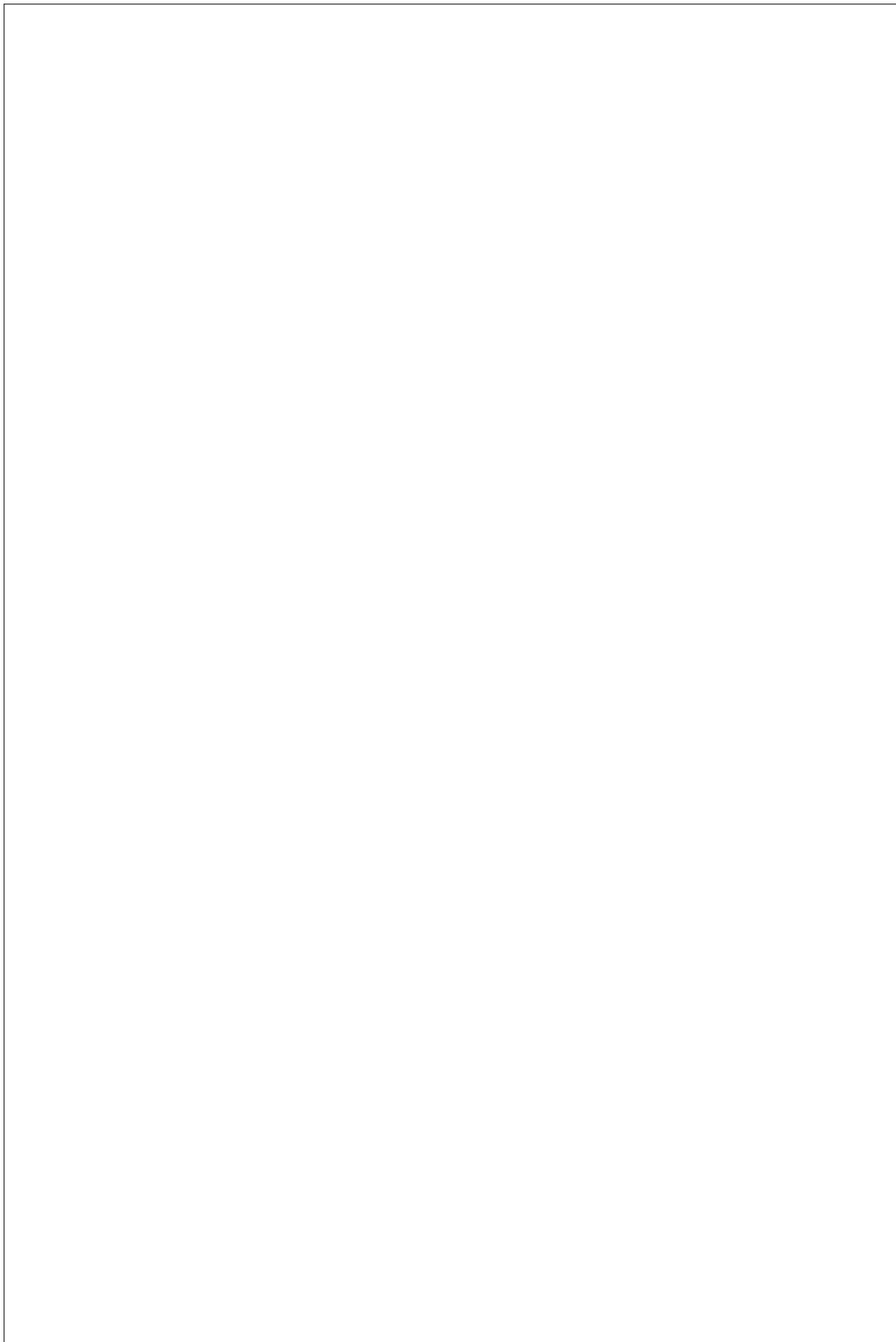
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We remind you that ...

Determine ...

CATALOGUE



Teacher : **TEACHER**
 EXAM - -
 DATE
 DURATION

B-7

Student 10

SCIPER: **999009**Room: **R-B**

Signature:

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CATALOGUE

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Question statement with several possible correct answers

- | | |
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Question statement with several possible correct answers

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CATALOGUE

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Then $\inf A \in A$ and $\sup A \in A$.

TRUE FALSE

CATALOGUE

Third part, open questions

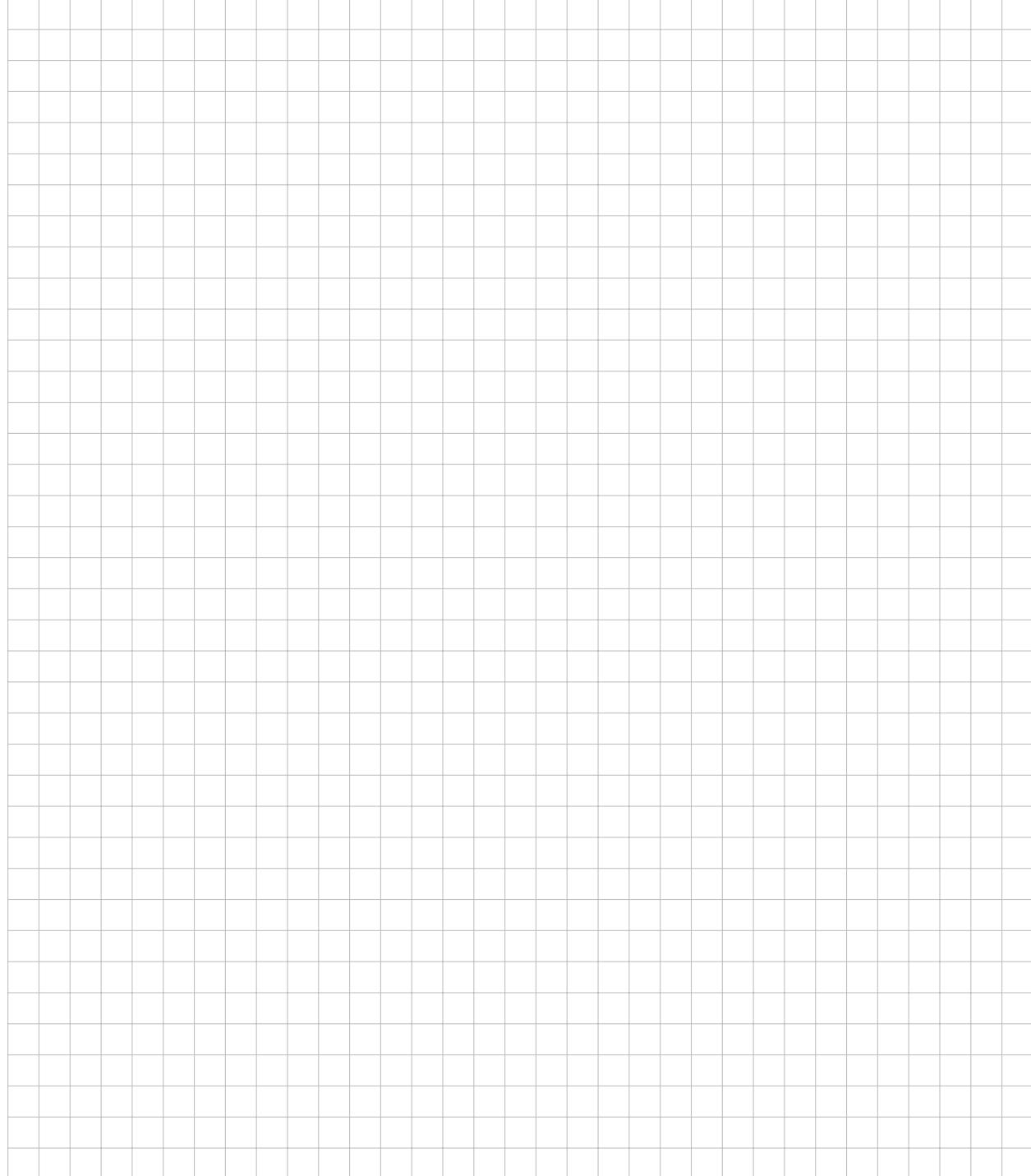
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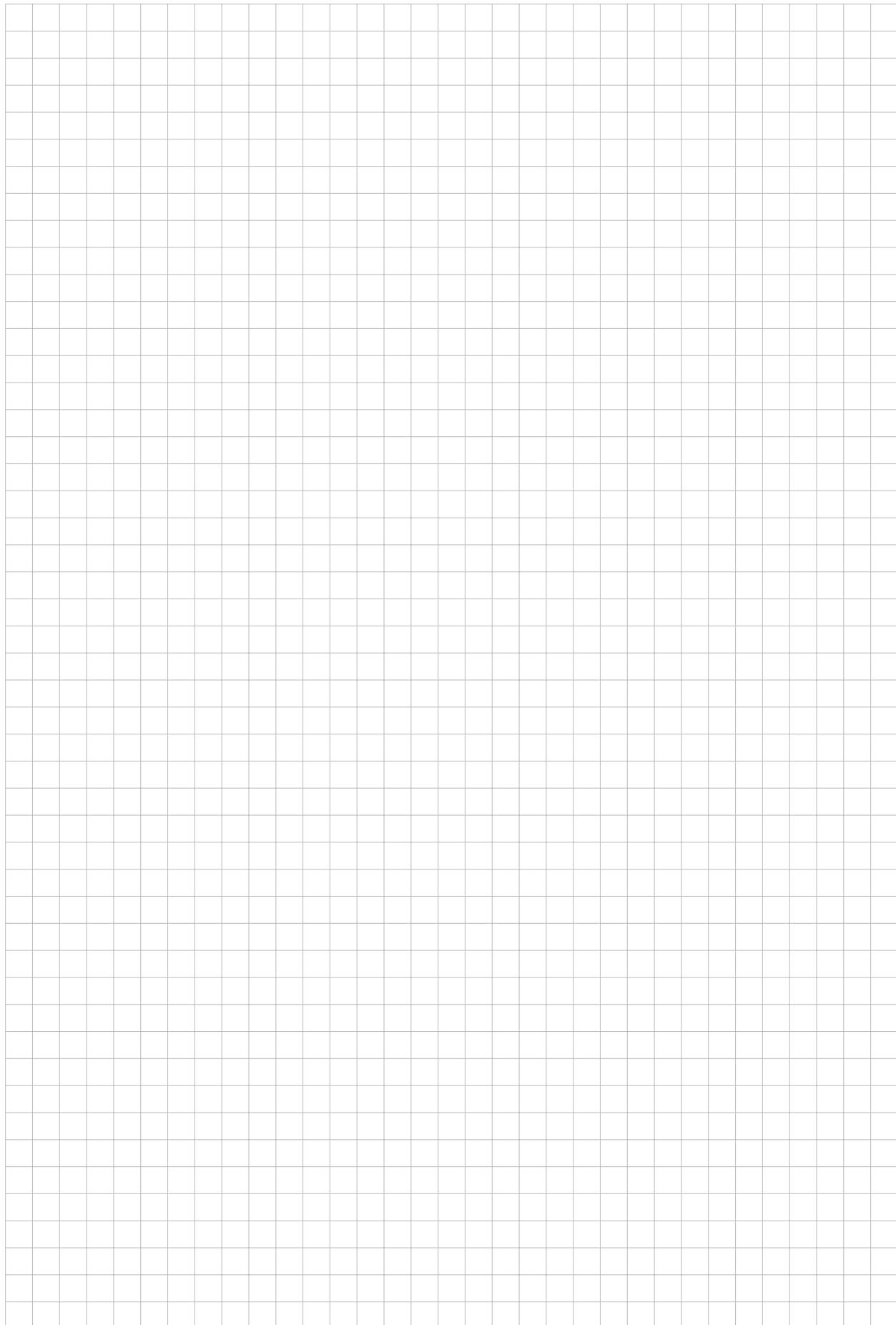
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CATALOGUE



CATALOGUE

Question 7: *This question is worth 2 points.*

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We remind you that ...

Determine ...

CATALOGUE

