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Correction of the Scientific English Exam – Master in Mathematics – Level M1

Duration: 2 hours

Abstract. In this paper, we study a simple mathematical model from applied sciences. The model is described by a system of equations depending on a small number of parameters. We analyze the main properties of the model and discuss the behavior of the solutions. A basic numerical method is used to approximate the solutions. Numerical results illustrate the validity of the approach.

Exercise 1 — Reading Comprehension (6 points)

1. What is the subject of the paper?
The paper studies a simple mathematical model used in applied sciences.

2. How is the model described?
The model is described by a system of equations depending on a small number of parameters.

3. What is the role of numerical results in the paper?
The numerical results illustrate and confirm the validity of the proposed approach.

Exercise 2 — Vocabulary and Academic Expressions (4 points)

1. Study: Analyze / Investigate
2. Simple: Basic / Elementary
3. Discuss: Examine / Address
4. Show: Demonstrate / Illustrate

Exercise 3 — Writing (5 points)
1. *Objective of the work:*
The objective of this work is to analyze the behavior of a mathematical model arising in applied sciences.
The study aims to understand the influence of key parameters on the system dynamics.
Particular attention is given to the qualitative properties of the solutions.
A numerical method is employed to approximate the solutions efficiently.
The results provide insight into the reliability of the proposed model.

2. *Advantage of the method:*
One major advantage of the numerical method is its simplicity of implementation.
It requires limited computational resources while providing accurate approximations.
The method is stable for a wide range of parameters.
Moreover, it can be easily adapted to similar models.
This makes it suitable for practical applications.

Exercise 4 — Grammar and Style (5 points)
1. The model describes a physical phenomenon.
2. We use a numerical method to approximate the solution.
3. The results show that the method is efficient.
4. This approach is interesting for applied problems.
5. We use a numerical method for approximating the solution.

(The sentence 5 is correct, but it is less elegant and less commonly used in this context.)