

ANALYSIS OF STUDENTS' ERRORS IN ANSWERING MATHEMATICAL LITERACY QUESTIONS

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Abstract

Mathematical literacy-based problems require the ability to read, interpret and connect contextual information with mathematical concepts, which is often a challenge for students. This difficulty is especially evident in modulo congruence material which requires an understanding of number concepts and mathematical logic. This study aims to analyze students' errors in solving mathematical literacy problems related to modulo congruence material. The research subjects were ten grade XI students from one of the high schools in Gowa Regency who were selected by purposive sampling. The method used was a written test to identify the types of errors, as well as in-depth interviews to explore the causes. The results showed that students had difficulty in understanding important information from the problem, translating it into a mathematical model, and composing the solution steps systematically. The conclusion of this study shows that learning interventions are needed that focus on strengthening context understanding, practicing reading problems critically, and habituation to develop coherent solution strategies. In addition, gradual integration of mathematical literacy exercises needs to be done so that students are able to develop mathematical thinking skills as a whole.

Keyword: *Congruence; Error Analysis; Math Literacy Problem; Modulo*

1. INTRODUCTION

The word “mathematics” comes from the Greek word *mathema*, which means science, knowledge, or learning, and *mathematikos*, which means “fond of learning.” If we look at the literal meaning, there is actually no reason for us to dislike or fear

mathematics. Because if we dislike mathematics, it means we dislike learning.

Research [1], Mathematics is a science that is acquired through thinking (reasoning). Mathematics emphasizes activities in the world of reason (reasoning), rather than emphasizing the results of experiments or observations. Mathematics is formed by human thoughts, which are related to ideas, processes, and reasoning.

There are various views on the meaning of mathematics, influenced by each individual's background knowledge and experience. Some consider mathematics to be a symbolic language, a language of numbers, or a means of eliminating ambiguity, diversity of meaning, and emotional influence. On the other hand, there are also those who see mathematics as a logical way of thinking, a tool for reasoning, a human activity, and even refer to it as the "queen and servant of science." Additionally, mathematics is known as an abstract science based on deductive reasoning.

Through these various perspectives, it can be concluded that there is no single definition that can encompass the entire meaning of mathematics. All of these definitions complement each other and are acceptable, because mathematics can be viewed from many aspects and plays a significant role in various fields of life, from the simplest to the most complex.

The importance of mathematics in everyday life makes mastering mathematical knowledge very important, especially for students. In everyday life, students often encounter various problems related to personal, social, work, and academic aspects. Many of these problems require an understanding and application of mathematical concepts. Therefore, mastering mathematics is not only about understanding theories or formulas, but also about using mathematics as a tool to solve real-life problems in everyday life. In

this context, mathematical literacy is essential for understanding and applying mathematical concepts logically in everyday life.

Mathematical literacy refers to a person's ability to formulate, apply, and interpret mathematics in various real-life situations. This ability includes mathematical reasoning skills and the use of mathematical concepts, procedures, facts, and tools to explain and predict various events. Mathematical literacy also encourages a person to communicate and describe problems logically and accurately based on an understanding of mathematical concepts.

In line with the importance of mathematical literacy, the reality on the ground shows that many students still struggle to solve mathematical problems accurately. According to [2], Errors in solving math problems are a form of deviation that occurs during the problem-solving process and have a significant impact on the learning process. These errors can hinder deep conceptual understanding and reduce the ability to think mathematically in a logical and systematic manner. Therefore, it is important to identify and analyze various types of errors to improve learning effectiveness. Common errors include misunderstandings of concepts and formulas, calculation mistakes, errors in interpreting mathematical symbols or notations, as well as procedural errors in selecting and applying appropriate solution steps. These errors often stem from a lack of understanding of previously learned material, highlighting the importance of a strong conceptual understanding as a foundation in math learning.

The issue of low literacy skills in Indonesia needs to be a serious concern for educators and the academic community, as literacy is a crucial foundation in supporting the success of the learning process at every level of education. Therefore, various efforts and solutions that can be directly applied in the school environment are needed. One such effort is evident in a study conducted by [3] that examined the application of the Problem

Based Learning (PBL) model as a method to improve students' literacy. The research results indicate that after implementing the PBL model, there was a significant increase in students' literacy skills. This is because the PBL model encourages students to actively solve problems, think critically, and understand the material more deeply through contextual situations.

In addition, another study conducted by [4] highlighted the importance of developing teaching materials based on mathematical literacy. In his research, he developed teaching materials in the form of modules specifically designed to enhance students' mathematical literacy. As a result, the developed teaching materials were deemed suitable for use in the learning process and effective in helping students better understand mathematical concepts. This shows that the availability of relevant teaching materials that support literacy is an important factor in improving students' literacy skills in school.

This approach becomes highly relevant when applied to topics that require a strong conceptual understanding, one of which is the material on congruence. Congruence is part of the study of number theory that focuses on division in integers, which is expressed through relationships with symbol " $\equiv$ ". In advanced learning, this concept develops into congruence modulo m , which is a statement involving congruence relations with the modulo operation. The modulo operation is a mathematical process used to determine the remainder of the division of one number by another. To understand and solve literacy problems related to the concept of modulo congruence, a good mastery of mathematical literacy is required. This allows students to accurately interpret the problems and solve them correctly through orderly and systematic steps.

The research conducted by [5] aims to identify the types of errors made by students in solving mathematical story problems.

Based on the analysis results, it was found that students made several errors that significantly impacted their ability to find the correct solutions. Three main forms of errors identified include: (1) errors in converting information from the story problem into a mathematical model, referred to as modeling errors; (2) errors in understanding concepts or applying the appropriate mathematical formulas; and (3) errors in organizing and writing conclusions from the final answers. From all the analyzed data, most students showed limitations in understanding the overall meaning of story-form problems.

In line with these findings, [6] also conducted research on the types of errors that arise when students solve mathematical literacy problems, particularly those related to quadratic equations. This study not only maps out the forms of errors but also reveals the factors influencing them. The errors identified consist of: (1) errors in understanding the content of the problem; (2) errors in designing the resolution strategy; (3) errors in executing the steps of resolution; and (4) negligence in rechecking the results of the work. Among these four types, the most frequent errors occur in the execution stage of the planning. The causes include students' inability to understand the sentences in the problems, limitations in mastering arithmetic operations, and a lack of attention to detail during the problem-solving process.

At the higher education level, [7] this study investigates errors in solving mathematical problems among Computer Engineering students using the Kastolan model as an analytical framework. In this approach, errors are classified into three main categories: conceptual errors, procedural errors, and technical errors. The analysis results show that conceptual errors are the most dominant type of error, with a percentage of 57.14%. Additionally, procedural errors were recorded at 28.57%, while technical errors accounted for 9.52% of the total cases. Interestingly, only about 4.76% of

respondents were able to correctly solve problems without making mistakes. These findings indicate the need to strengthen the understanding of basic concepts as a first step to improve the quality of mathematics education among students. This result indicates that even at higher education levels, understanding basic concepts remains a major challenge in systematically solving mathematical problems.

Some research findings indicate that the error rate in solving math problems by students is still relatively high. Common errors that frequently occur include difficulties in modeling information from story problems into mathematical form, inappropriate application of concepts, and incorrect conclusions. In addition, many students face obstacles in understanding the content of the problems, designing effective problem-solving strategies, and verifying their final answers. At the college level, especially among engineering students, it was found that conceptual errors have the largest proportion compared to procedural and technical errors. These findings indicate that understanding basic mathematical concepts remains a significant challenge at various levels of education.

Although several studies have identified various types of errors in solving mathematical problems at the junior high school, senior high school, and university levels, most have not specifically discussed how high school students understand and solve mathematical literacy problems that involve the concept of congruence (modulo). This type of problem requires an integration of conceptual understanding, procedural skills, and contextual reasoning. Therefore, a more in-depth study is needed to identify the various types of errors that arise in the problem-solving process. This step aims to gain a more comprehensive understanding of the obstacles faced by students in learning, while

also opening up opportunities to design more effective and meaningful learning strategies.

Unlike previous studies, this research specifically highlights the errors made by high school students in solving context-based mathematical literacy problems related to congruence modulo, which have not been extensively studied in depth. The novelty of this research lies in the in-depth analysis of the errors that arise when students integrate their understanding of concepts, procedures, and contexts in solving mathematical literacy problems. Therefore, the results of this study are expected to provide a real contribution to the development of learning approaches that are more relevant to the demands of mathematical literacy at the secondary level.

2. RESEARCH METHOD

A. Types of Research

This research employs a qualitative descriptive approach, which according to [8] is a research method aimed at examining the quality of relationships, activities, and various other material forms through processes of analysis, interviews, and observation as the main techniques for collecting the necessary data. In this study, this approach is used to identify and analyze various types of errors made by students when working on mathematics literacy questions based on the material of congruence modulo.

B. Research Subject

The subjects in this study are 10 eleventh-grade students selected through purposive sampling techniques. The criteria for selecting subjects include varying mathematical abilities, specifically, students with good and moderate abilities based on

teacher observation. This selection aims to achieve a wider and more representative variation of errors.

C. Research Instruments

The main instrument used is a descriptive test consisting of five questions developed based on the material of congruence modulo and arranged in the form of mathematical literacy questions. The questions are based on three mathematical literacy indicators that include: (1) The ability to understand and identify information from the context of the question, (2) The ability to formulate appropriate mathematical models or strategies, (3) The ability to interpret and draw conclusions from the results of the solution in the context of the question. In addition to the test, a semi-structured interview is also used to explore the students' thinking processes and explain the reasons behind the mistakes made.

D. Research Procedures

The research began with coordination with the mathematics subject teacher to ensure the alignment of the material taught to the students and to select research subjects based on purposive sampling criteria. Next, instruments for mathematical literacy questions based on modulus congruence material were developed, along with a semi-structured interview guide to explore the students' thinking processes. After the instruments were ready, ten eleventh-grade students participated in the data collection stage. The students worked on five descriptive mathematical literacy questions within a designated time. Semi-structured interviews were then conducted with all subjects to track their understanding of the questions and to identify the reasons for any errors that occurred.

E. Data Analysis Techniques

The test data was analyzed using the error percentage based on the method proposed by [9]. Each question has certain assessment components, and students are awarded partial points according to the accuracy level of their answers. The maximum score for each question is predetermined as a reference. After obtaining all the scores, the total score is calculated, then converted into an error percentage against the maximum score. Additionally, interview results are used to trace the students' thinking processes, identify the causes of errors, and understand the relationship between conceptual understanding, the question context, and the chosen problem-solving steps.

Table 1. Criteria for Student Error Levels

Percentage Error Range	Criteria
0% - 20%	Very Low Error
21% - 40%	Low Error
41% - 60%	Intermediate Error
61% - 80%	High Error
81% - 100%	Very High Error

3. RESULTS AND DISCUSSION

The common problem that arises is the weak understanding of students regarding the material of congruence modulo. This is reflected in the mistakes in translating information from the questions into mathematical models, as well as the unstructured problem-solving steps. Such errors align with the findings of [5], which found that many students struggle to transform story problem information into mathematical model form (modeling errors). Additionally, [6] also reported that errors in planning and executing problem-solving strategies are the most frequently occurring category in mathematics literacy problems. The findings

are reinforced by the interview results in this study, where students admitted to being confused in formulating the steps of solution, even when they had understood some of the information from the problem. At a higher education level, [7] revealed that students still face similar challenges, with a dominance of conceptual errors when solving model-based Kastolan math problems. Despite being in higher education, understanding basic concepts remains a major barrier that affects the quality of their work results.

The same tendency is observed when students are given math literacy problems based on Congruence Modulo. Some students show difficulties in understanding the content of the questions, which leads to errors in converting the information from story problems into appropriate mathematical models. This indicates that modeling errors remain one of the biggest challenges in solving math literacy problems. Additionally, the unsystematic problem-solving process and carelessness in reviewing the results also contribute to the emergence of mistakes. The similarity in these error patterns indicates that the underlying issue lies in the inability to understand the context of the questions as a whole and the limitations in designing effective problem-solving strategies. Enhancing math literacy skills, particularly in the aspects of modeling and systematic problem-solving, becomes a crucial priority to improve the quality of learning at various levels of education. Thus, the results of this study not only confirm but also reinforce previous findings about the dominance of misunderstanding and transformation errors in mathematics literacy-based questions.

Table 2. Percentage of Students' Answers

Question	Maximum score	Average student scores	Average score percentage	Error category
1	20	6	30%	Low Error
2	20	6,6	33%	Low Error

3	20	9,5	47,5%	Intermediate Error
4	20	14	70%	High Error
5	20	10	50%	Intermediate Error

Table 2 presents the data from students' answers. In question number 1, the success rate of students is classified as high. This indicates that, based on Table 1, the interpretation of students' error rates falls into the low category. However, there are still some students who provided incorrect answers. Conversely, the results obtained in question number 4 show a very low success rate, with a high error rate. This condition serves as an indicator of underlying issues in understanding the concepts related to that question.

Overall, out of a total of 50 student answers, 30 answers were classified as incorrect, with a fairly high error percentage. Interestingly, most of the 30 mistakes showed a relatively similar error pattern, making them suitable for further analysis regarding the types of errors and their dominant causes.

Based on the analysis results, two prominent types of errors were found. First, students had difficulty understanding literacy-based questions, particularly in identifying key information. Second, the non-systematic steps in solving problems resulted in incorrect answers. These difficulties indicate that students' mathematical literacy skills are still relatively low. This aligns with the definition of scientific literacy by [10] which states that literacy encompasses an individual's capacity to use scientific knowledge, identify questions, and draw conclusions to understand and make decisions related to the real world and the changes that occur due to human activities. In the context of mathematics, this statement emphasizes the importance of the ability to identify, apply, and understand mathematical concepts in various real-life situations.

Thus, students with low mathematical literacy will have difficulty understanding literacy questions, especially in the process of converting verbal information into mathematical form. This inability directly affects the choice of an inappropriate problem-solving strategy and ultimately results in incorrect answers. Therefore, improving mathematical literacy is crucial to help students overcome mistakes in effectively solving contextual problems. Here is a discussion of each mistake:

Question 1:

1. In class XI IPA 2, students take turns doing class duty every day. There are 7 students in one duty group: Ani, Budi, Citra, Dedi, Ema, Farhan, and Gina. They take turns based on the order of their names. The duty starts on Monday, June 13, 2025, with Ani as the first person on duty. Each day one person will be on duty, and the order will continue to rotate. Determine:

- Who will have duty on the 16th day since Monday, June 13, 2025?
- If today is the 115th day since Monday, June 13, 2025, who is on duty today?
- If Gina wants to know when she will be on duty again after her first turn, how many days will she have to wait since her first turn?

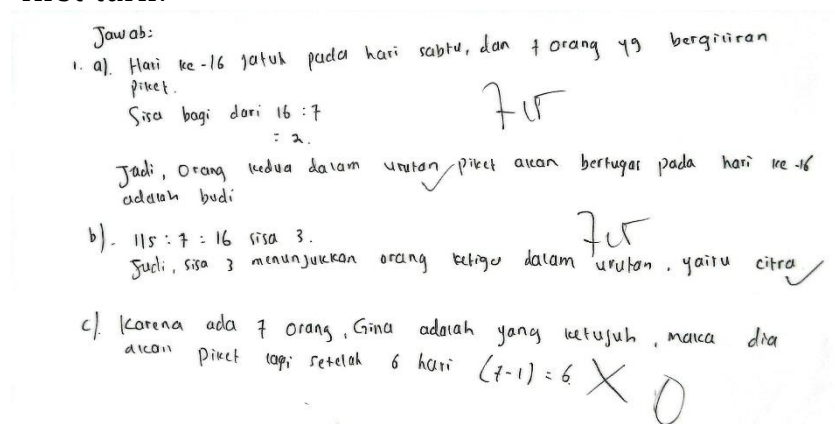


Figure 1. Student's answer to question 1

Although some students can answer question number 1 correctly, this indicates that they have understood the basic concept of Modulo Congruence. However, there are still some students who make mistakes in answering that question. These mistakes are not due to a lack of knowledge about the material, but rather because of a lack of meticulousness when reading and understanding the question carefully. Similar mistakes often occur because students do not double-check their answers.

For question number 1, the student was able to answer parts a and b, however, there was an error in part c. The correct answer for part c is seven days, not six days. Since Gina is the seventh person, her duty schedule is in multiples of seven. The student correctly noted that there are seven people and Gina is the seventh, but they subtracted one, which led to their mistake in answering the question.

The result of the interview by the student who answered question 1 part c incorrectly is that he thought after Gina's turn for duty, the rotation would go to Ani, Budi, Citra, Dedi, Ema, and Farhan. After Farhan's turn, it would be Gina's turn again. Therefore, Gina has to wait for 6 days. Since there are 7 people and the sequence is repeated, after the first duty, Gina has to wait $7-1 = 6$ days for the next duty. The student's mistake in solving this problem can be categorized as a mistake in applying the concept of sequence and cycles in a real-life context. This error is caused by the student's lack of understanding of the duty rotation pattern and how to calculate the days needed for the next duty. Therefore, students need to improve their understanding of the concepts of orders and cycles by realizing that if there are 7 people and the order repeats, then Gina will have duty every 7 days. Thus, students can more accurately calculate the days needed for Gina's next duty. The teacher can assist students by providing clearer and more

specific examples of the duty order patterns and how to calculate the days needed for the next duty.

Question 2:

2. In a calendar, January 1, 2025 falls on a Wednesday. Each leap year will push January 1 back by 2 days, while a regular year only pushes it back by 1 day. On what day will January 1, 2050 fall?

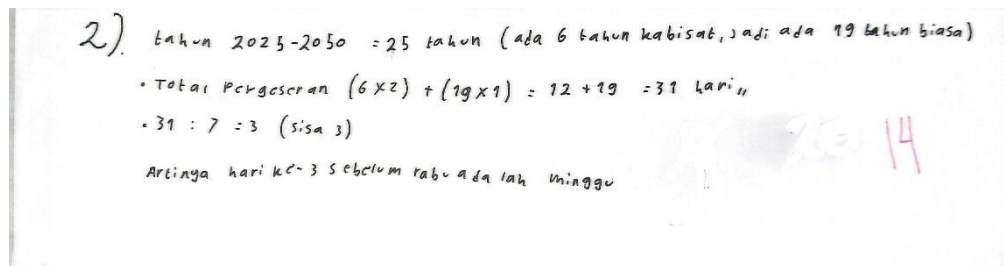


Figure 2. Student's answer to question 2

The answer is the result of a student who successfully answered question number 1 correctly and demonstrated a good understanding of the basic concept of Modulo Congruence. The aim of question 2 is to find out what day it is on January 1, 2050. It appears that the student has been able to interpret the initial concept of Modulo Congruence, but there is an error when determining what day January 1, 2050 falls on. The student should have added the result of the remainder to Wednesday, making the answer Saturday instead of Sunday.

From the results of the interview that has been conducted, the student uses the modulus results as a reference to determine the day. He calculated a remainder of 3 and assumed it indicated the number of days to associate with the starting day, which is Wednesday. However, the student was mistaken in applying the direction of the calculation, as he subtracted 3 days from Wednesday instead of adding it. This shows that the student

understands the importance of the modulus remainder, but has not yet grasped that in the context of days, the remainder is used to add days forward, not subtract them. The conclusion from the student's interview indicates that the student has a good understanding of the modulus concept and can calculate the modulus remainder correctly. However, students still face difficulties in applying the concept in the context of determining days. Students understand that the modulus remainder can be used as a reference to determine the day, but they do not yet understand that this remainder is used to add days forward from the starting day, not to subtract it. Therefore, a clearer explanation and examples are needed on how to correctly use the modulus remainder to determine the day.

Question 3:

3. A courier service delivers a package to Dina's house every 11 days. The first package was sent on January 1, 2025 (Wednesday). On what day will Dina receive the 100th package?

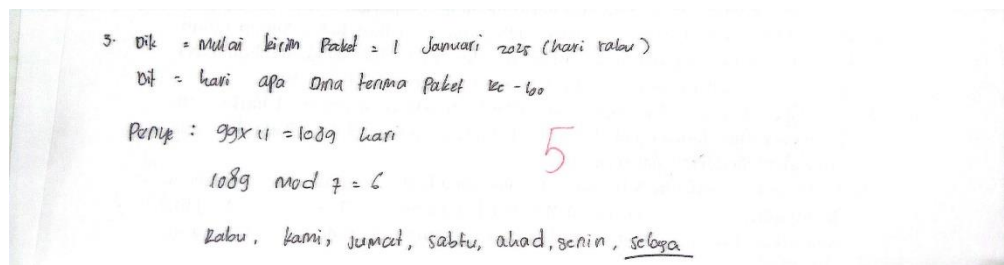


Figure 3. Student's answer to question 3

The analyzed answers come from students who successfully answered questions number 1 and 2. This question is designed to determine on what day Dina will receive the 100th package. This is evident from the students' answers who have been able to identify the intent and purpose of the given mathematics literacy question by organizing the known information, formulating the questions to

be answered, and writing down the steps to solve it systematically. However, an error occurred in determining the remainder of the division which impacted the determination of the day. The students wrote down a remainder of 6, whereas the correct remainder is 4. Thus, the correct day is Sunday, not Tuesday.

From the results of the interview conducted, the student stated that he had never studied the material, so he felt difficulties when answering the questions. However, based on the notes in the student's book and the teacher's explanation, the modulus material had actually been presented and learned, and noted previously. This indicates that the student has not recalled the material that has been taught, or is less diligent when revisiting his notes. Therefore, it is important to get students into the habit of reviewing their notes and understanding the exercises that have been given, so that their understanding is stronger and similar mistakes do not occur.

Question 4:

4. 3,000 students form a line and receive cards in turn from a stack. The cards are given in the order: A, B, C, D, then repeated ($A \rightarrow B \rightarrow C \rightarrow D \rightarrow A \dots$). If the 79th student receives card B, what card will the 2030th student receive?

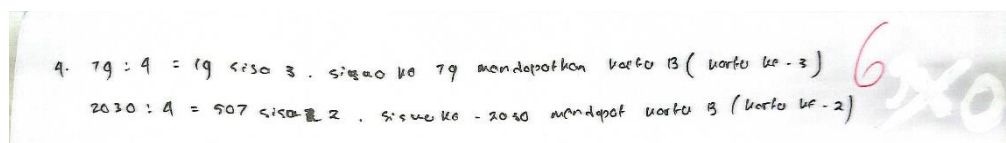


Figure 4. Student's answer to question 4

This answer is the result of a student who has understood part of the information from the question but still encounters mistakes in the problem-solving process. The question asks the student to determine the type of card received by student number 2030, based on the fixed repeated distribution of cards: A, B, C, and

D. The question states that student number 79 received card B. This information should have been used as the main reference to establish the pattern of card distribution. However, the student failed to use it consistently, leading to an error in interpreting the remainder of the distribution. To solve this question correctly, a repeating pattern approach based on the concept of congruence modulo 4 is used, since there are four types of cards. The student's position is decreased by one first before calculating the remainder because the first card (card A) is given to the first student. Therefore:

$$(79-1) = 78$$

$78 \bmod 4 = 2$, Thus, the remainder 2 is associated with card B. Based on this, the pattern of card distribution according to the remainder of the division is:

remainder 0 $\rightarrow$ D

remainder 1 $\rightarrow$ A

remainder 2 $\rightarrow$ B

remainder 3 $\rightarrow$ C

Next, to find out the 2030 student card:

$$(2030-1) = 2029$$

$$2029 \bmod 4 = 1$$

The remainder 1 indicates that the 2030th student will receive card A.

However, some students made the mistake of equating the position of student 2030 (who has a remainder of 1) with the position of student 79 (who has a remainder of 2), leading them to conclude that the cards obtained were also the same, namely B. This

mistake indicates that these students have not yet understood how to construct patterns based on contextual information and the results of division remainders. Additionally, there are students who did not subtract 1 from the position before performing the modulo operation, which resulted in a pattern that did not align with the actual order of division.

These errors indicate that some students do not yet have a complete understanding of the concepts of number patterns and congruence in the context of word problems. Therefore, mathematical literacy learning needs to emphasize students' ability to connect important information from the problems with appropriate problem-solving strategies, as well as to practice the use of mathematical operations in a contextual and consistent manner.

Question 5:

5. At Harapan Bangsa High School, math tests are held every 7 days. The first test is held on Monday. On what day will the 45th test be held?

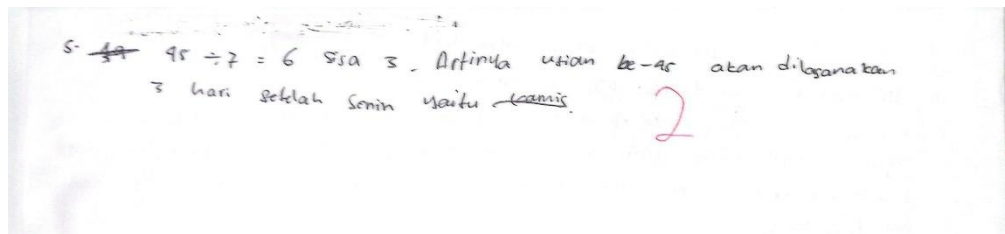


Figure 5. Student's answer to question 5

This answer is the result of the work of a student who was able to complete questions number 1 and 2 correctly. The aim of this question is to determine on what day the 45th exam will be held. It is evident from the student's unstructured answer that this is one of the reasons for the student's mistakes in answering the question. The student did not multiply by 7 first before dividing, thus the

calculation does not reflect the actual number of days. Because the cycle of days repeats every seven days, the correct first step should have been to multiply the number of weeks by 7 to get the total days, and then perform division or modulo by 7.

The results of the interview with the student who answered question number 5 incorrectly show that the student directly divided it by 7, without first multiplying 45 by 7 as should have been done according to the context of the question. The student also stated that he still does not fully understand the concept of modulo congruence. To address this issue, the student needs to understand the concept of modulo congruence and the correct steps in solving the problem. The student should understand that the first step in solving the problem is to multiply 45 by 7, not to directly divide by 7. After that, the student can perform the division and determine the modulo remainder. Therefore, the student needs to thoroughly study the concept of modulo congruence, including definitions, properties, and examples. By understanding this concept and following the right steps, students can solve problems more easily and accurately. Teachers can assist students by providing clearer explanations and relevant examples, as well as giving students the opportunity to practice solving related problems.

The findings in this study show a significant difference compared to the findings [11] which examined students' mistakes in solving math literacy problems on the subject of Systems of Two-variable Linear Equations (SPLDV). In that study, the most dominant errors occurred in the aspect of mathematical modeling, errors in performing arithmetic operations, and inaccuracies in choosing the correct concepts about ratios and patterns of numbers. In other words, students' difficulties are more clearly seen when they are asked to convert contextual problems into mathematical models

and when understanding the information contained in word problems.

Meanwhile, the findings of this study reveal that students' errors in solving congruence modulo problems actually arise from the very beginning of the problem-solving procedural stages. These errors are related to students' inability to determine the correct sequence of operational steps (initial procedural), rather than just at the modeling stage or calculation errors at the end of the process. This condition indicates that in algorithmic problems such as congruence modulo, misconceptions regarding basic procedures become the main factors causing errors. In contrast, in contextual mathematical literacy problems such as linear equations, students' constraints are more often caused by difficulties in building models and understanding the context of the problems as a whole. Therefore, this research contributes new insights into mapping types of errors that are procedural in nature, which have not been widely addressed in similar studies.

4. CONCLUSION AND SUGGESTION

The errors made by students in solving mathematical literacy problems on the topic of Modulo Congruence involve several common mistakes; students struggle to understand literacy-based problems, especially in identifying important information and translating it into mathematical models. Additionally, unsystematic problem-solving steps lead to incorrect results from the problem-solving process. Based on the processed data, all students experienced difficulties in solving literacy problems, particularly in topics that require deep analysis.

These errors are generally caused by a lack of understanding of concepts, minimal practice problems, and students' lack of focus in reading and comprehending the content of the questions.

Therefore, a learning approach is needed that not only focuses on formal mastery of concepts but also aims to develop students' mathematical literacy. This effort can be realized through increasing the intensity of contextual practice problems, familiarizing students with reading and understanding questions critically, and implementing systematic problem-based learning to train analytical and reflective thinking skills.

This research has limitations in the scope of subjects, involving only students from a single school with a limited number of participants, so the findings cannot yet be widely generalized. Additionally, this study has not explored other external factors that may influence students' mistakes, such as differences in learning styles, teachers' teaching strategies, and learning environment conditions. Therefore, further research is needed with a broader scope and a more varied approach to obtain a more comprehensive picture regarding students' errors in solving mathematical literacy problems, particularly on the topic of congruence modulo.

In line with this, this research can be continued by collecting more specific data on the types of errors made by students in solving mathematics literacy problems on the topic of Modulo Congruence, as well as further analyzing the relationship between these errors and the influencing factors, such as conceptual understanding, practice problems, and critical reading skills. Thus, further research can provide a clearer picture of how to improve students' mathematical literacy skills on the topic of Modulo Congruence.

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