

David Had \$350. After Shopping, He Was Left With \$235. If C Represents The Amount He Spent, Write An

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Understanding basic algebra and financial calculations can be quite helpful in everyday life. Whether you're managing personal budgets, planning shopping trips, or solving word problems, the ability to translate real-world scenarios into mathematical expressions is invaluable. In this article, we'll explore a common problem involving initial amounts, expenditures, and remaining funds, exemplified by David's shopping experience. We'll break down the problem, understand how to set up algebraic expressions, and explore related mathematical concepts to strengthen your problem-solving skills.

Understanding the Problem

Let's begin by carefully examining the details of the scenario:

- David started with \$350.
- After shopping, he was left with \$235.
- The amount David spent is represented by C.

From this information, our goal is to write an algebraic expression or an equation that models the situation accurately.

Interpreting the Scenario

To understand how to formulate the problem mathematically, consider the following points:

- The initial amount David had: \$350.
- The amount remaining after shopping: \$235.
- The amount spent during shopping: C.

The key question is: how can we relate these quantities?

Logical reasoning:

- The total amount David started with is the sum of what he spent and what he had left.

- Therefore, the initial amount (\$350) is equal to the sum of the amount spent (C) and the remaining amount (\$235).

This can be expressed as an equation:

$$\text{Initial amount} = \text{Amount spent} + \text{Remaining amount}$$

Or, in symbols:

$$350 = C + 235$$

Formulating the Algebraic Expression

Based on the above reasoning, we can write the equation:

Equation:

$$350 = C + 235$$

Our goal is to find the value of C, the amount David spent.

Solving for C: The Amount Spent

Let's proceed to solve for C:

Step 1: Subtract 235 from both sides

$$350 - 235 = C + 235 - 235$$

$$115 = C$$

\]

Step 2: Write the solution

\[

$$\boxed{C = 115}$$

\]

Interpretation: David spent \$115 during his shopping trip.

Verifying the Solution

It's always good to verify your answer by plugging the value of C back into the original context:

- Starting amount: \$350
- Spending: \$115
- Remaining amount: \$235

Check:

\[

$$\text{Remaining amount} = \text{Starting amount} - \text{Amount spent}$$

\]

\[

$$235 = 350 - 115$$

\]

\[

$$235 = 235$$

\]

Since both sides are equal, our solution is correct.

Related Concepts in Algebra and Financial Mathematics

Understanding this problem leads us to explore related topics that are useful in various mathematical and real-world contexts.

1. Basic Algebraic Equations

- Formulating problems as equations helps in solving real-world scenarios.
- Common operations include addition, subtraction, multiplication, and division.

2. Variables and Their Significance

- Variables like C represent unknown quantities.
- Assigning variables allows for flexible problem-solving strategies.

3. Solving for Unknowns

- Isolating variables by performing inverse operations.
- Ensuring the solution satisfies the original problem.

4. Applications in Budgeting and Finance

- Calculating expenses, savings, and remaining funds.
- Planning budgets based on income and expenditure.

Additional Examples and Practice Problems

To strengthen your understanding, consider practicing with similar problems:

Example 1:

Sarah started with \$500. After shopping, she had \$320 left. If S represents the amount she spent, write an equation and find S .

Solution:

- Initial amount: \$500
- Remaining: \$320
- Equation: $500 = S + 320$
- Solve for S :

$$S = 500 - 320 = 180$$

\]

Sarah spent \$180.

Example 2:

John had \$200. After buying some items, he was left with \$150. If the amount spent is represented by D , write an algebraic expression and determine D .

Solution:

- Equation: $(200 = D + 150)$
- Solving:

\[

$$D = 200 - 150 = 50$$

\]

John spent \$50.

Key Takeaways for Effective Problem Solving

- Carefully read the problem to identify known and unknown quantities.
- Assign variables to unknowns to create algebraic expressions.
- Formulate equations based on logical relationships.
- Solve equations systematically, checking your work.
- Verify solutions by substituting back into the original problem.

Conclusion

Understanding how to translate word problems into algebraic expressions is a fundamental skill that enhances your mathematical reasoning and real-world decision-making. In the case of David, we established that he spent \$115, leaving him with \$235 after shopping. By mastering similar problems, you can confidently handle various financial calculations and develop a strong foundation in algebra.

Whether you're managing personal finances, solving classroom problems, or analyzing data, the ability to formulate and solve equations is an essential skill that empowers you to make informed decisions and solve complex problems efficiently. Keep practicing with different scenarios to

strengthen your algebraic thinking and financial literacy skills.

Frequently Asked Questions

What is the amount David spent if he started with \$350 and was left with \$235 after shopping?

David spent \$115.

How do you write an equation to represent the problem where David had \$350, spent C dollars, and was left with \$235?

The equation is $350 - C = 235$.

What is the value of C in the equation $350 - C = 235$?

$C = 115$.

If David had \$350 and spent \$ C , leaving \$235, what is the amount C spent?

He spent \$115.

Why is the equation $350 - C = 235$ important in solving this problem?

It helps determine the amount C that David spent by relating his initial amount, expenditure, and remaining money.

What is the significance of representing the problem with an algebraic equation?

It allows for a clear and straightforward way to find the unknown amount C that David spent.

Additional Resources

David Had \$350. After Shopping, He Was Left With \$235. If C Represents The Amount He Spent, Write An Equation To Represent This Situation.

In everyday financial decisions, understanding how to translate real-life scenarios into mathematical expressions is an essential skill. Consider the case of David, who started with a specific amount of money, spent some during shopping, and then was left with a certain amount. The question at hand is: if C represents the amount David spent, how can we formulate an equation that accurately

models his financial situation? This seemingly simple problem offers a window into the foundational concepts of algebra that are fundamental to both academic learning and practical financial literacy.

The Context of the Problem

Before delving into the mathematical formulation, it's important to understand the scenario fully:

- David initially had \$350.
- After shopping, he was left with \$235.
- The variable C is used to denote the amount of money David spent during his shopping trip.

The primary goal is to derive an algebraic expression or equation that captures this situation logically and mathematically.

Breaking Down the Scenario

To translate the real-world situation into an algebraic model, we need to identify the key components:

1. Initial amount of money (Start): \$350
2. Amount spent (C): Unknown, but represented by the variable C
3. Remaining amount after shopping: \$235

The relationship between these components is straightforward: the amount remaining after subtracting what was spent from the initial amount should equal the leftover.

Establishing the Mathematical Relationship

Given the above, the fundamental principle at play is:

Initial Amount - Amount Spent = Remaining Amount

Expressed mathematically as:

Initial Amount - C = Remaining Amount

Substituting the known values:

$$\$350 - C = \$235$$

This simple algebraic equation succinctly models David's spending scenario.

Formulating the Equation

The process of formulating equations from word problems involves recognizing the relationships and

translating them into algebraic expressions. In this case:

- Initial amount: a constant, 350
- Spent amount: variable, C
- Remaining amount: known, 235

Thus, the general form is:

$$\text{Initial amount} - C = \text{Remaining amount}$$

Plugging in the known values:

$$350 - C = 235$$

This is the core equation representing the problem.

Interpreting the Equation: What Does It Tell Us?

The equation $350 - C = 235$ encapsulates a straightforward relationship. It states that if David started with \$350, and after spending an unknown amount C, he was left with \$235, then the amount he spent is the difference between these two amounts.

From a practical standpoint, this equation helps answer questions such as:

- How much money did David spend during shopping?
- If David spent a certain amount, how much should he expect to be left with?
- What would be the initial amount if the remaining amount and the spent amount are known?

Solving for C

Once the equation is established, solving for C involves basic algebra:

$$350 - C = 235$$

Subtract 235 from both sides:

$$350 - 235 = C$$

Calculate:

$$115 = C$$

This tells us that David spent \$115 during his shopping trip.

Broader Implications and Applications

While this problem appears straightforward, it illustrates essential algebraic principles that are

widely applicable:

- Modeling real-world problems: Many financial and everyday situations can be represented using simple equations.
- Understanding variables: Assigning variables (like C) helps generalize problems and prepare for more complex scenarios.
- Solving for unknowns: Isolating the variable allows us to find unknown quantities based on known information.

This approach is foundational in fields such as finance, economics, engineering, and data analysis, where modeling relationships mathematically is critical.

Extending the Problem: Variations and Additional Considerations

To deepen understanding, consider how the problem might change under different circumstances:

- If the initial amount was unknown: Suppose David started with an unknown amount X . Given the remaining amount and the amount spent, how would you write an equation?

Solution:

$$X - C = 235$$

- If the amount spent was known, and you wanted to find initial funds: For example, if David spent \$115, what was his starting amount?

Solution:

$$\text{Initial amount} = C + 235 = 115 + 235 = 350$$

- If the remaining amount was different: For instance, what if David was left with \$200? How much did he spend?

Solution:

$$350 - C = 200 \rightarrow C = 350 - 200 = 150$$

These variations showcase the flexibility of algebraic modeling in solving diverse problems.

Practical Tips for Formulating Equations from Word Problems

1. Identify known and unknown quantities: Clearly distinguish what information is given and what needs to be found.
2. Translate relationships: Use words like "more than," "less than," "difference," "total," or "remaining" to express relationships mathematically.
3. Assign variables: Choose meaningful variables for unknown quantities.
4. Write the equation: Combine the components into a mathematical expression that reflects the problem's logic.
5. Solve for the unknown: Use algebraic methods to find the value of the variable.

Applying these steps consistently ensures clarity and accuracy in translating real-world scenarios into algebraic language.

Summary

In conclusion, the problem involving David's initial funds, his expenditure, and the remaining balance exemplifies how everyday situations can be modeled with simple algebraic equations. By recognizing the core relationship—that the initial amount minus the amount spent equals the remaining amount—we derive the equation:

$$350 - C = 235$$

Solving this equation reveals that David spent \$115 during his shopping trip. This process underscores the importance of understanding how to translate words into mathematical expressions, a skill that is invaluable in academic settings and real-life financial decision-making alike.

Whether you're budgeting, planning expenses, or analyzing data, mastering the art of formulating and solving such equations empowers you to make informed decisions and develop a deeper appreciation for the power of mathematics in understanding the world around us.

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