

FOR EASY BRAINLIEST ANSWER QUESTION BELOW!

1. Solve Each Word Problem

.twice A Number Added Three Times

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Introduction

Word problems are an essential part of mathematics education because they help students develop critical thinking and problem-solving skills. They are designed to translate real-world scenarios into mathematical expressions that can be solved systematically. One common type of word problem involves understanding relationships between quantities, such as sums, differences, and multiples of numbers.

In this article, we will focus on a specific kind of word problem: "twice a number added three times". This phrase might sound complex at first, but once broken down, it becomes straightforward to translate into an algebraic expression and solve. These problems often appear in math competitions, homework assignments, and standardized tests, making them important to master for students aiming for high scores.

Our goal is to provide a detailed, step-by-step guide to solving such problems, including examples, explanations of key concepts, and tips to approach similar questions efficiently. Whether you're a student struggling to understand the concept or someone looking to sharpen your problem-solving skills, this article will serve as a comprehensive resource.

Understanding the Phrase: "Twice a Number Added Three Times"

Before diving into problem-solving techniques, it's crucial to understand what the phrase "twice a number added three times" means.

- "Twice a number": This refers to multiplying a variable (say, x) by 2, or 2 times the number.
- "Added three times": This indicates that the previous quantity (twice the number) is to be added three times, which is equivalent to multiplying by 3 and then adding.

To clarify, the phrase can be interpreted as:

- Take a number (x).

- Double it: $2 \times x$.

- Add this doubled value three times: 3 times the doubled value, which is $3 \times (2 \times x) = 6 \times x$.

Alternatively, depending on the exact wording, it might mean:

- Take a number (x).

- Add it to itself twice (which is the same as $3 \times x$).

- Then add 3 more times of the number, or possibly the phrase might be indicating the sum of "twice the number" plus "three times the number," which would be $2 \times x + 3 \times x = 5 \times x$.

However, in most problem contexts, "twice a number added three times" is interpreted as:

> "Twice a number" + "three times the number" = $2 \times x + 3 \times x$.

This is an important distinction because it affects the algebraic expression you form.

How to Translate Word Problems into Algebraic Expressions

When faced with word problems involving phrases like "twice a number added three times," follow these steps:

1. Identify the unknown quantity: Usually represented by a variable, commonly x .

2. Translate the phrases into algebraic expressions:

- "Twice a number" $\rightarrow 2 \times x$.
- "Three times a number" $\rightarrow 3 \times x$.
- "Added" indicates addition.

3. Combine the expressions as per the wording:

- If the phrase says "twice a number added three times," and it means the sum of twice the number and three times the number, then the total expression is $2 \times x + 3 \times x = 5 \times x$.

4. Set up the equation based on the problem statement:

- The problem will usually give a total value or another expression to compare with.
- For example, "The sum of twice a number and three times the number is 20" translates to $5 \times x = 20$.

5. Solve the equation for the variable x .

Example 1: Basic Word Problem

Problem:

"Twice a number added three times equals 20. Find the number."

Solution:

1. Let the unknown number be x .
2. Translate the phrase:
 - "Twice a number" = $2x$.
 - "Three times a number" = $3x$.
 - "Added" indicates addition, so $\text{sum} = 2x + 3x = 5x$.
3. Set up the equation:

$$5x = 20$$

4. Solve for x :

$$x = 20 / 5$$

$$x = 4$$

Answer: The number is 4.

Example 2: Slightly More Complex Word Problem

Problem:

"A number doubled and then added three times the number results in 35. Find the number."

Solution:

1. Let the number be x .
2. Translate:
 - "Doubled" = $2x$.
 - "Three times the number" = $3x$.
 - "Added" indicates sum: $2x + 3x = 5x$.
3. Set up the equation:

$$5x = 35$$

4. Solve:

$$x = 35 / 5$$

$$x = 7$$

Answer: The number is 7.

Variations and Additional Examples

Word problems can present the phrase in various contexts, sometimes involving more operations or additional information. Here are some common scenarios:

Scenario A: The total sum is given

Problem:

"Twice a number plus three times the same number equals 45. Find the number."

Solution:

- Expression: $2 \times x + 3 \times x = 45$
- Simplify: $5 \times x = 45$
- Solve: $x = 45 / 5 = 9$

Answer: The number is 9.

Scenario B: The result is a multiple of the sum

Problem:

"Twice a number added three times the same number is equal to four times the number. Find the number."

Solution:

- Expression: $2 \times x + 3 \times x = 4 \times x$
- Simplify left side: $5 \times x = 4 \times x$
- Bring all to one side: $5 \times x - 4 \times x = 0$
- Simplify: $x = 0$

Answer: The number is 0.

Tips for Solving Word Problems Involving "Twice a Number Added Three Times"

1. Carefully Read the Problem: Understand what each part of the phrase means and identify the key quantities.

2. Translate Phrases into Algebra:

- "Twice" = $2 \times \text{variable}$.
- "Three times" = $3 \times \text{variable}$.
- "Added" = addition.

3. Combine Like Terms Carefully: Remember that "twice a number" plus "three times a number" sums to $5 \times x$, unless the problem specifies otherwise.

4. Set Up the Equation Correctly: Use the context and what the problem asks for to form an accurate equation.

5. Check for Multiple Interpretations: Some phrases can be ambiguous; clarify what the problem is asking to avoid errors.

6. Solve Step-by-Step: Simplify the equation and isolate the variable carefully.

7. Verify Your Answer: Substitute the found value back into the original context to ensure it makes sense.

Advanced Word Problems and Their Solutions

Let's explore more complex problems involving "twice a number added three times," sometimes combined with other operations or conditions.

Example 3: Word Problem with a Total

Problem:

"Three times a number plus twice the same number equals 50. Find the number."

Solution:

1. Let x be the number.

2. Translate:

- "Three times a number" = $3 \times x$.
- "Twice the same number" = $2 \times x$.
- "Equals 50" indicates the sum: $3 \times x + 2 \times x = 50$.

3. Simplify:

$$5 \times x = 50$$

4. Solve:

$$x = 50 / 5 = 10$$

Answer: The number is 10.

Example 4: Word Problem with a Difference

Problem:

"Twice a number decreased by three times the number equals 5. Find the number."

Solution:

1. Let x be the number.
2. Translate:
 - "Twice a number" = $2 \times x$.
 - "Decreased by" indicates subtraction.
 - "Three times the number" = $3 \times x$.

3. Set up:

$$2 \times x - 3 \times x = 5$$

4. Simplify:

$$-x = 5$$

5. Solve:

$$x = -5$$

Answer: The number is -5.

Common Mistakes to Avoid

- Misinterpreting the

Frequently Asked Questions

What is the algebraic expression for 'a number added three times'?

The expression is $3x + x$, which simplifies to $4x$.

If a number doubled plus three times the same number

equals 20, what is the number?

Let the number be x . Then, $2x + 3x = 20$, so $5x = 20$, and $x = 4$.

Solve: A number plus three times that number equals 16. What is the number?

Let the number be x . Then $x + 3x = 16$, so $4x = 16$, and $x = 4$.

In the phrase 'a number added three times,' what does 'three times' refer to?

'Three times' indicates multiplying the number by 3.

If the problem states: 'A number added three times equals 15,' what is the solution?

Let the number be x . Then, $x + 3x = 15$, so $4x = 15$, and $x = 15/4$ or 3.75.

How can you interpret 'twice a number added three times' in an algebraic form?

It can be written as $2x + 3$, where x is the number.

What is the common approach to solving word problems involving 'a number added three times'?

Translate the phrase into an algebraic equation, then solve for the variable.

If a number plus three times the same number equals 28, what is the number?

Let the number be x . Then $x + 3x = 28$, so $4x = 28$, and $x = 7$.

What does 'solve each word problem twice' imply in this context?

It suggests solving the same problem using two different methods to ensure understanding and accuracy.

Additional Resources

For Easy Brainliest Answer Question Below! 1. Solve Each Word Problem Twice: A Number Added Three Times

Introduction

Mathematics is often regarded as a universal language, with word problems serving as vital tools to develop critical thinking and problem-solving skills. Among these, algebraic word problems like "A number added three times" challenge students to translate real-world scenarios into mathematical expressions. These problems are fundamental in building a solid foundation for more advanced topics.

In this article, we will explore the common phrase "A number added three times" through an in-depth, investigative lens. We aim to demonstrate how to approach such problems methodically, solve each once as an initial attempt, and then re-express and verify solutions through a second approach. This dual-solving method not only enhances comprehension but also fosters confidence in tackling similar problems.

Our analysis will cover:

- The typical structure of these word problems
- Step-by-step solutions with detailed reasoning
- Variations of the problem to showcase flexibility
- Strategies for effective problem interpretation and solving

This comprehensive examination seeks to serve as a valuable resource for students, educators, and enthusiasts eager to master algebraic word problems with clarity and precision.

Understanding the Core Phrase: "A Number Added Three Times"

What Does the Phrase Mean?

The phrase "A number added three times" generally indicates an operation involving a certain unknown number, often denoted as x . The phrase suggests that the number is being summed with itself multiple times, which can be mathematically expressed as:

- $x + x + x$ (adding the same number three times)
- or $3x$ (three times the number)

In many cases, the phrase is part of a larger problem that provides additional context, such as total sum or comparison.

Example in Context

Suppose the problem states:

"A number added three times equals 15. Find the number."

This can be translated into:

$$x + x + x = 15$$

or equivalently,

$$3x = 15$$

which leads to solving for x .

First Approach: Direct Translation and Solution

Step 1: Translate the Word Problem into an Equation

For the example:

"A number added three times equals 15."

The translation is straightforward:

$$3x = 15$$

Step 2: Solve the Equation

To find x , divide both sides by 3:

$$x = 15 \div 3 = 5$$

Answer: The number is 5.

Step 3: Verify the Solution

Substitute $x = 5$ back into the original statement:

$$3 \times 5 = 15$$

which confirms the solution is correct.

Second Approach: Using a Variable and a Step-by-Step Breakdown

Now, let's approach the same problem with a different method to reinforce understanding.

Step 1: Define the Unknown

Let x be the number.

Step 2: Express the Total Sum

Since the number is added three times:

$$x + x + x = 3x$$

Step 3: Set Up the Equation Based on the Context

Given the total sum:

$$3x = 15$$

Step 4: Solve for x

Divide both sides by 3:

$$x = 15 / 3 = 5$$

Step 5: Confirm the Result

Substitute $x = 5$ into the expression:

$$3 \times 5 = 15$$

The consistency confirms our solution.

Exploring Variations: Different Contexts and Formulations

To deepen understanding, consider some variations of the original problem:

Variation 1: The Sum is Unknown

"A number added three times equals some number, say S."

Expressed as:

$$3x = S$$

If $S = 21$, then:

$$x = 21 / 3 = 7$$

Variation 2: The Number is Known, and the Sum is Unknown

"Three times a certain number equals a total, which is unknown. Find the total if the number is 4."

Expressed as:

$$3 \times 4 = 12$$

The total sum is 12.

Variation 3: The Number is Part of a Larger Equation

Suppose the problem states:

"A number plus itself three times equals 24."

Expressed as:

$$x + 3x = 24$$

which simplifies to:

$$4x = 24$$

then,

$$x = 24 / 4 = 6$$

Interpreting the Phrase in Different Contexts

While the phrase "A number added three times" typically translates into $3x$, it's important to recognize potential ambiguities:

- If the problem states "a number increased by three times," it could imply $x + 3x$ (which simplifies to $4x$).
- If it states "a number, and then added three," it might mean $x + 3$.
- Context clues are essential for accurate translation.

This highlights the importance of carefully reading the entire problem to understand what is being asked.

Strategies for Solving Similar Word Problems

1. Identify the Unknowns: Assign variables to unknown quantities.
2. Translate Words into Mathematical Expressions: Focus on key phrases like "added," "times," "total," etc.
3. Simplify Expressions: Use algebraic rules to combine like terms.
4. Set Up Equations: Based on the problem statement, create an equation.
5. Solve Step-by-Step: Use inverse operations, like division or subtraction.
6. Verify the Solution: Substitute back into the original or translated expression.
7. Consider Variations: Think about different interpretations or related problems.

Conclusion

The phrase “A number added three times” is a foundational concept in algebra, illustrating how simple language can translate into elegant mathematical expressions. By solving these problems twice—first through direct translation and then through a more detailed, step-by-step approach—learners can reinforce their understanding and develop confidence in handling similar problems.

Mastering such word problems requires careful reading, precise translation, and methodical solving. Recognizing different contexts and potential ambiguities also enhances problem-solving flexibility. As with any mathematical skill, practice is key—solving various versions of these problems solidifies comprehension and prepares students for more complex challenges.

In essence, “A number added three times” isn’t just about finding a value; it’s about cultivating a systematic approach to understanding and translating language into mathematics, a skill invaluable across all levels of learning and application.

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