# Jenny Is X Years Old. Thomas Is 3 Times As Old As Her. Jenny Is 5 Years Older Than Alexis.A) Find Alexis's

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Understanding age-related puzzles can be both intriguing and educational. In this article, we will explore a classic problem involving the ages of three individuals: Jenny, Thomas, and Alexis. The problem provides specific relationships between their ages, and our goal is to determine Alexis's age based on the given data. We will break down the problem, analyze the relationships, develop equations, and solve step-by-step to find the precise age of Alexis. This comprehensive guide aims to help learners improve their algebra skills while understanding how to interpret word problems involving age.

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## Introduction to the Age Problem

The problem states:

- Jenny is X years old.
- Thomas is 3 times as old as Jenny.
- Jenny is 5 years older than Alexis.
- Our goal: Find Alexis's age.

At first glance, the problem involves multiple relationships, but with systematic steps, we can find a solution. It involves translating words into algebraic expressions and solving equations.

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## Breaking Down the Relationships

To solve the problem effectively, it's essential to understand and organize the given information:

### 1. Jenny's Age

- Given as X years old.

## 2. Thomas's Age

- Thomas is 3 times as old as Jenny.
- Equation: Thomas's age = 3 × Jenny's age = 3X.

## 3. Alexis's Age

- Jenny is 5 years older than Alexis.
- Equation: Jenny's age = Alexis's age + 5.
- Rearranged: Alexis's age = Jenny's age - 5 = X - 5.

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# Developing the Mathematical Model

Based on the relationships, we can establish the following algebraic expressions:

1. Jenny's age = **X**
2. Thomas's age = **3X**
3. Alexis's age = **X - 5**

Our task is to find Alexis's age in terms of the variable X.

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# Determining the Value of X

The key challenge is that the problem provides relationships but not an explicit value for X. To find X, we need an additional piece of information, such as a specific age or a real-world context. Since the problem as given does not specify a numerical value for X, it suggests that the answer might be expressed in terms of X or that X is a variable representing Jenny's age.

However, in many age puzzles, the goal is to find an age in terms of the variable or to establish possible values that satisfy certain conditions, such as ages being positive integers.

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# Assuming Realistic Conditions

For the problem to make sense:

- All ages should be positive integers.
- Alexis's age = X - 5 must be positive, so X > 5.

Furthermore, since Thomas is 3X, his age should also be a positive integer, and logically, it should be greater than Jenny's age.

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# Sample Calculation: Choosing a Value for X

Let's explore with some example values for X that satisfy the conditions:

- X > 5, so start with X=6.

Example:

- Jenny's age: 6 years.
- Thomas's age: 3 × 6 = 18 years.
- Alexis's age: 6 - 5 = 1 year.

All are positive integers, and the relationships hold:

- Jenny is 5 years older than Alexis: 6 vs. 1 — check.
- Thomas is 3 times Jenny's age: 18 vs. 3×6 — check.

Similarly, for X=7:

- Jenny: 7 years.
- Thomas: 21 years.
- Alexis: 7 - 5 = 2 years.

Again, all positive, relationships hold.

This pattern continues for all X > 5.

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# Expressing Alexis's Age in Terms of X

Based on the above, the general formula for Alexis's age is:

**Alexis's age = X - 5**

where X > 5.

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# Conclusion: Final Answer and Summary

The problem "Jenny is X years old. Thomas is 3 times as old as her. Jenny is 5 years older than Alexis. Find Alexis's age." can be summarized as follows:

- Jenny's age: X years.
- Thomas's age: 3X years.
- Alexis's age: X - 5 years.

Key takeaways:

- The variable X represents Jenny's age, which must be greater than 5 for Alexis to be positive.
- Without a specific value for X, the answer for Alexis's age remains in algebraic form: X - 5.
- If a specific age is desired, additional information or constraints are needed.

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# Additional Tips for Solving Similar Age Problems

To effectively approach similar problems, consider these steps:

- Identify all variables and assign algebraic symbols.
- Translate word relationships into equations.
- Look for given numerical relationships or constraints.
- Solve equations systematically, checking for logical consistency.
- Interpret the solution in the context of the problem.

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# FAQs About Age Word Problems

## Q1: Why do we need to assume that ages are positive integers?

In real life, ages are positive integers because age cannot be negative or zero (except for newborns). Assuming positivity helps us find realistic solutions.

## Q2: Can the problem have multiple solutions?

Unless additional constraints are provided, the problem allows infinitely many solutions depending on the value of X, as long as X > 5. The corresponding ages can be calculated accordingly.

## Q3: How can I verify my solution?

Plug your found value of X into all expressions to ensure the relationships hold and ages are reasonable.

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# Summary

In conclusion, the age problem involving Jenny, Thomas, and Alexis demonstrates fundamental algebra and problem-solving skills. By translating the relationships into equations, analyzing constraints, and exploring possible values, we find that Alexis's age is X - 5, with X being Jenny's age and greater than 5. This type of problem emphasizes the importance of careful interpretation and systematic solving in mathematical word problems, providing valuable practice for students and enthusiasts alike.

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Remember: When tackling age puzzles, always organize the given data, translate words into algebra, and verify your solutions for logical consistency. With practice, you'll become adept at solving even the trickiest of age-related riddles!

# Frequently Asked Questions

## If Jenny is 10 years old and Thomas is 3 times as old as her, how old is Thomas?

Thomas is 30 years old.

## Jenny is 12 years old and is 5 years older than Alexis. How old

## is Alexis?

Alexis is 7 years old.

## Given Jenny's age and the relationship with Thomas and Alexis, how do you find Alexis's age?

First, determine Jenny's age, then subtract 5 to find Alexis's age.

## If Jenny's age increases to 15, how would you find Thomas's age?

Multiply Jenny's age by 3; so Thomas would be 45 years old.

## In a scenario where Jenny is 8 and Alexis is 3, what is Thomas's age?

Thomas's age is 24, since he's 3 times Jenny's age.

## If Jenny is 9 years old and she is 5 years older than Alexis, what is Alexis's age?

Alexis is 4 years old.

# Additional Resources

Jenny Is X Years Old. Thomas Is 3 Times As Old As Her. Jenny Is 5 Years Older Than Alexis. A Closer Look at Age-Related Math Problems

In the realm of everyday puzzles and mathematical riddles, age problems are a fascinating intersection of logic and algebra. They often seem simple on the surface but reveal rich insights when broken down systematically. Today, we explore a classic age-related problem involving three individuals: Jenny, Thomas, and Alexis. The problem statement reads:

Jenny is X years old. Thomas is 3 times as old as her. Jenny is 5 years older than Alexis. Find Alexis's age.

This seemingly straightforward question invites us to delve into algebraic reasoning, interpret multiple relationships simultaneously, and develop a clear, methodical approach to solving for an unknown variable. Let’s dissect this problem step-by-step, understanding the underlying principles, and ultimately arrive at a precise answer.

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Understanding the Components of the Problem

Before jumping into calculations, it’s essential to understand the information provided and what is

asked.

Given Data:

- Jenny’s age: X years old (unknown variable)
- Thomas’s age: 3 times Jenny’s age
- Jenny’s age relative to Alexis: 5 years older

What is asked:

- Find Alexis’s age.

This problem involves three individuals, with two explicit relationships:
1. Thomas’s age relative to Jenny’s.
2. Jenny’s age relative to Alexis.

Our goal is to express Alexis’s age in terms of the variable X, the age of Jenny, and then compute it explicitly.

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Step 1: Expressing Known Relationships Mathematically

Let’s formalize the relationships:

- Jenny’s age: X
- Thomas’s age: Since Thomas is 3 times as old as Jenny:
Thomas’s age = 3X

- Alexis’s age: Since Jenny is 5 years older than Alexis:
Jenny’s age = Alexis’s age + 5
Or rearranged:
Alexis’s age = Jenny’s age - 5 = X - 5

At this point, the variables are linked:

- Alexis’s age = X - 5
- Jenny’s age = X
- Thomas’s age = 3X

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Step 2: Clarifying the Unknowns and Constraints

While the problem explicitly asks for Alexis’s age, it introduces a variable X for Jenny’s age, which may or may not be directly solvable without additional information.

Key considerations:

- Ages are generally non-negative integers.
- The expression for Alexis’s age, X - 5, must be non-negative, because age cannot be negative.

Therefore:

$X - 5 \geq 0$
which implies:

$X \geq 5$

This is a critical boundary condition: Jenny must be at least 5 years old for Alexis's age to be a valid, non-negative number.

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Step 3: Exploring the Relationships for Additional Insight

The problem as currently posed is underdetermined—meaning, with the given information, we can express Alexis's age in terms of X, but we cannot determine a unique value for X unless more details are provided.

Possible approaches:

- If the problem were to specify Jenny's age directly, we could compute Alexis's age immediately.
- If the ages are constrained to integers and reasonable ages, then the smallest possible Jenny's age is 5, which gives Alexis's age as 0.

Suppose we consider realistic age ranges:

- Scenario 1: Jenny is 5 years old
Then:
Alexis = 5 - 5 = 0 (a newborn or infant)
Thomas = 3 × 5 = 15

- Scenario 2: Jenny is 6 years old
Then:
Alexis = 6 - 5 = 1
Thomas = 3 × 6 = 18

Similarly, for higher values of X:

| Jenny's age (X) | Alexis's age (X - 5) | Thomas's age (3X) |
|---|---|---|
| 5 | 0 | 15 |
| 6 | 1 | 18 |
| 7 | 2 | 21 |
| 8 | 3 | 24 |
| 9 | 4 | 27 |

And so on.

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Step 4: The Constraints and Real-World Context

In real-world scenarios, ages are typically whole numbers, and ages like zero or one are possible, especially for infants or very young children. The problem remains open-ended unless further constraints are specified.

Suppose the original question intends for us to find the value of Alexis's age based solely on the algebraic relationships, then the answer is:

Alexis's age = X - 5, where X ≥ 5.

Without additional information, this is the most precise conclusion.

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Step 5: Additional Assumptions and Final Calculation

If we assume the problem wants a specific numeric answer, perhaps the most natural assumption is that Jenny's age is a reasonable, whole number age that fits typical age ranges.

Example assumption:

- Let's assume Jenny is 10 years old (a common, mid-range age for such problems).

Then:

- Jenny's age: X = 10
- Alexis's age: 10 - 5 = 5
- Thomas's age: 3 × 10 = 30

Thus, Alexis is 5 years old.

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Conclusion: What Is Alexis's Age?

Based on the algebraic relationships:

- Alexis's age = X - 5
- Jenny's age = X
- Thomas's age = 3X

Given the constraints that ages are non-negative and realistic, the minimal value for Jenny's age is 5, which yields:

Alexis's age = 0

For larger values of Jenny's age, Alexis's age increases accordingly, maintaining the relationship:

Alexis's age = Jenny's age – 5

In summary:

- The exact age of Alexis depends on Jenny’s age, which is represented by the variable X.
- Without specific information about Jenny’s age, the best we can do is express Alexis’s age as X - 5.
- If an assumption about Jenny’s age is made (e.g., Jenny is 10), then Alexis’s age is 5.

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Final Remarks

Problems involving ages are not only about algebra but also about understanding constraints and real-world logic. They serve as excellent exercises in translating word problems into equations, respecting constraints, and interpreting solutions within a realistic context. Whether you are a student, a puzzle enthusiast, or a curious reader, mastering these types of problems enhances both your problem-solving skills and your appreciation for the elegance of algebra.

In essence, the problem "Jenny is X years old; Thomas is 3 times as old as her; Jenny is 5 years older than Alexis" ultimately hinges on the value of X, which is bounded by real-world constraints, giving Alexis’s age as X - 5. The exact number depends on additional context or assumptions about Jenny’s age.

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