Learning Tip:

When We Get Stuck in Math

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Fermat's Last Theorem

Definition

We call positive integers a, b, and c a **Pythagorean triple** if $a^2 + b^2 = c^2$.

Example

$3^2 + 4^2 = 5^2$ and $8^2 + 15^2 = 17^2$. So $(3, 4, 5)$ and $(8, 15, 17)$ are Pythagorean triples.

Question

Are there positive integers a, b, and c where $a^3 + b^3 = c^3$?

Fermat's Last Theorem

- In 1637, French mathematician Pierre de Fermat (1601–1665) claimed that, for every integer $n \geq 3$, the equation

$$a^n + b^n = c^n$$

  has no positive integer solutions for a, b, and c.
- Fermat wrote that he had a proof that was too large to fit in the margin of the page, but he never actually published a proof of this claim during his lifetime.
- The first actual proof of Fermat's claim is due to Andrew Wiles, published in 1995.

When You Get Stuck in Math

When you encounter a math problem you cannot immediately solve:

- **Stay calm**: Try to maintain a positive mindset and avoid panic.
- **Break it down**: Ensure you understand the problem. Can you tackle any parts of it?
- **Experiment**: Don't worry about getting a perfect solution right away. Every attempt offers insight that can get you closer.
- **Be patient**: Give your brain some quality time with the problem.
- **Take a break**: Walk away from the problem for a bit and let your brain work in the background.
- **Seek help**: If you are still stuck, seek help with the goal to learn, not just to get the answer.