

# Prime Discovery A Formula Generating Primes and Their Composites

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## Commentary

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## ABOUT THE STUDY

In the pursuit of understanding the enigmatic world of prime numbers, a unique formula has been identified, which can be used to generate prime numbers, with the exception of 2 and 3. This formula is expressed as ( $n =$  positive integer,  $p =$  prime number), where, intriguingly, the output for other positive integers results in irrational numbers. This enigmatic formula not only reveals prime numbers but also unveils a peculiar pattern related to composite numbers derived from prime factors. These composite numbers, which arise as exceptions in the context of prime generation, exhibit regularity and may offer new insights into the interconnected of prime and composite numbers. This discovery promises to broaden our understanding of the intricate world of number theory and provides a fresh perspective on the nature of prime numbers. Further exploration of this formula may uncover deeper mathematical principles and unlock novel avenues in number theory research.

$$p = \sqrt{1 + 24n}$$

The enigmatic world of prime numbers, those elusive integers that can only be divided by 1 and themselves, has captivated the minds of mathematicians for centuries. Prime numbers, like 2, 3, 5, and 7, are the fundamental building blocks of the integers, and their distribution throughout the number line has perplexed and intrigued scholars for generations. Countless theorems, conjectures, and algorithms have been devised in the quest to understand the mysterious patterns underlying these numbers. Yet, a new and remarkable discovery promises to shed light on this age-old mathematical mystery.

However, this formula's significance extends beyond merely identifying prime numbers. It takes us down a complex mathematical path unveiling a peculiar pattern that connects composite numbers derived from prime factors. These composite numbers, which appear as exceptions within the context of prime generation, exhibit a regularity that

defies conventional mathematical wisdom. They beckon us to reconsider the assumed disparities between prime and composite numbers and hint at a hidden harmony within the web of integers.

This discovery is not just a curiosity; it promises to redefine the boundaries of our understanding of the enigmatic world of prime numbers and offers a fresh and profound perspective on the nature of these fundamental mathematical entities. It invites us to reconsider the conventional wisdom and presents a unique opportunity to delve deeper into the inter connectedness of prime and composite numbers.

As we begin on this mathematical journey, the potential for further exploration of this formula becomes tantalizing. What underlying mathematical principles exist behind the surface? What novel avenues in number theory research could be unlocked by this enigmatic formula? The answers to these questions may revolutionize our understanding of prime numbers and bring us closer to unraveling the profound mysteries that have intrigued mathematicians for centuries. With each step forward in our exploration of this formula, we inch closer to a deeper understanding of the intricate and elegant world of number theory.

**Discovery of the prime number equation**

$$p = \sqrt{1 + 24n}$$

(n =positive integer, p =prime number) It seems like you’re describing a specific mathematical pattern or sequence involving prime numbers. If I understand correctly, you’re looking for a sequence that generates prime numbers, except for 2 and 3, but also generates a composite number that has some regularity. One way to generate such a sequence is to consider the Fibonacci sequence modulo some number. For instance, if you take the Fibonacci sequence modulo 6, you will get the following sequence: 1, 1, 2, 3, 5, 2, 1, 3, 4, 1, 5, 0, 5, 5, 4, 3, 1, 4, 5, 3, 2, 5, 1, 0, 1, 1, ... In this sequence, all the numbers are either 1, 2, 3, 4, or 5 modulo 6. The only prime numbers in this sequence are 2 and 3, but the rest are composite. There’s a clear regularity in the modulo pattern as well.

$$p = \sqrt{1 + 24n}$$

(n =positive integer, p =prime number)

- n=1, p=5
- n=2, p=7
- n=5, p=11
- n=7, p=13
- n=12, p=17
- n=15, p=19
- n=22, p=23
- n=35, p=29
- n=40, p=31
- n=57, p=37
- n=70, p=41
- n=77, p=43
- n=92, p=47
- n=117, p=53
- n=145, p=59
- n=155, p=61
- n=187, p=67

n=210, p=71  
n=222, p=73  
n=247, p=77  
n=260, p=79  
n=287, p=83  
n=330, p=89  
n=392, p=97  
n=425, p=101  
n=442, p=103  
n=477, p=107  
n=495, p=109  
n=532, p=113  
n=672, p=127  
n=715, p=131  
n=782, p=137  
n=805, p=139  
n=925, p=149  
n=950, p=151  
n=1028, p=157  
n=1107, p=163  
n=1162, p=167  
n=1247, p=173  
n=1335, p=179  
n=1365, p=181  
n=1520, p=191  
n=1552, p=193  
n=1617, p=197  
n=1650, p=199  
n=1855, p=211  
n=2072, p=223  
n=2147, p=227

## CONCLUSION

The discovery of a unique formula that can generate prime numbers, excluding 2 and 3, while yielding irrational numbers for other positive integers, is a remarkable breakthrough in the field of number theory. This enigmatic formula not only sheds light on the elusive world of prime numbers but also reveals an intriguing pattern among the composite numbers derived from prime factors. These composite numbers, which deviate from the prime generation pattern, exhibit a surprising regularity, offering a new avenue for exploring the interaction between prime and composite numbers. This discovery promises to expand our comprehension of number theory and provides a fresh perspective on the nature of prime numbers. Further research and exploration of this formula hold the potential to uncover deeper mathematical principles and unlock novel pathways for future investigations in the realm of number

theory, contributing to our ever-evolving understanding of this fascinating mathematical domain.

#### **CONFLICT OF INTEREST**

None

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