

# Suggestion to Study Number Theory of Non-Decimal Number Systems

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## *Abstract*

This paper suggests extending the studies of number theory to non-decimal number systems.

## *Content*

Number theory studies so far are focused in decimal system. Most theorems of number theory are based on decimal system. However, many of these theorems may become invalid in non-decimal number systems. They may need to be modified in other number systems such as octal system and duodecimal system.

I suggest extending number theory studies to the regime of non-decimal number systems. Various subdivisions such as octal number theory, hexadecimal number theory etc. inside number theory may be established and/or be further studied.

It should be interesting to examine:

- for a specific number system, which theorems in decimal number theory are still valid?
- for the specific number system, are there any new theorems that do not exist in decimal system?

It will also be interesting to find that which theorems of number theory are universal valid for all number systems (decimal or non-decimal).

The number theory studies of non-decimal number systems may lead to new findings and developments in various areas such as computer science and cryptography.