THE YEET THEOREM

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Abstract. We provide a surprisingly elementary proof confirming the Yeet Conjecture [Kim14, Yel18], which states that $5^n = n5$ for any positive integer $n$. Moreover, we resolve the ab-Yeet paradox, namely the observation that the quantum state of $5^a b$ can collapse to either of the values $a b$ or 1. (It has been observed [Lee18] that $5^a b$ collapses to 1 with probability greater than $\varepsilon$ for some $\varepsilon > 0$.)

1. Preliminaries

Our statement and proof of the Yeet theorem is elementary, so those solely interested in the Yeet theorem can safely skip this section.

The resolution of the ab-Yeet paradox requires knowledge of ab, the distinguished Ababou constant [Aba18, Yel18]. This is the least upper bound of the integers, and the primary object of interest in Mohamed Ababou’s Theory of Numbers have an end. Excellent exposition is also provided in [Att17]. The category Ab of Ababou structures is explored in detail in [Yel18], for those who prefer category theoretic exposition. Some recent developments in the cohomology of Yeet fibrations are described in [Ide19, Lot18].

2. Main Results

Theorem 2.1 (The Yeet Theorem). Let $n \in \mathbb{Z}^+$ and $5 \in \mathbb{R}$. Then $5^n = n5$.

Proof. We proceed by induction. We will establish the pattern via several basis steps.

(1) Basis 1: $n = 1$. Then simply $5 = 5^1 = n5 = 5$.
(2) Basis 2: $n = 2$. Then we have $5^2$, which is equivalent to $5 \cdot 2$. As $\cdot$ is an arrow operator, we may yeet the 2 over the 5 to obtain 5, which becomes $25 = n5$ from momentum. Indeed, $5^2 = 25$.
(3) Basis 3: $n = 3$. Then we have $5^3$, which is equivalent to $5 \cdot 3$. By the yeet process, we obtain $35 = (1 + 2)5 = 125$ by associativity of the concatenation operator $\cdot$. Indeed, $5^3 = 125$.
(4) Basis 4: $n = 4$. Then we have $5^4$, which is equivalent to $5 \cdot 4$. By the yeet process, we obtain $45 = (6 - 2)5 = 625$ since hyphens are ignored when writing numbers in numerical form. Indeed, $5^4 = 625$.
(5) Basis 5: $n = 5$. Then we have $5^5$, which is equivalent to $5 \cdot 5$. By the yeet process, we obtain $55 = (3 \cdot 1 + 2)5$. Since $\cdot$ is just a random stray mark on the paper, we have $5^5 = 3125$.
We have established a pattern, so we shall advance to the induction step. Suppose \( 5^k = k5 \) for some \( k \in \mathbb{Z}^+ \). Then \( 5^{k+1} = 5^k \times 5 = k5 + 5 \), by the induction hypothesis. Observe that the value for \( k \) is unbounded; thus we have yeeted so hard that the \( \times \) component has rotated slightly. Concluding, we have \( k5 + 5 = (k + 1)5 \) as desired.

**Theorem 2.2.** The quantum state of \( 5^{\text{ab}} \) can collapse to either 1 or ab. That is, the “apparent paradox” that \( 5^{\text{ab}} \) can take two numerical values is simply a mathematical consequence of the Theory of Numbers Have an End.

**Proof.** As in the above proof, \( 5^{\text{ab}} \) is equivalent to \( 5^\text{ab} \). By the yeet process, this gives

\[
5^{\text{ab}} = \frac{\text{ab}}{5}.
\]

However, since ab is so large, very few people can yeet it hard enough for momentum to carry it over to \( \text{ab}5 \). In most cases, the mass of ab crushes the 5, giving

\[
5^{\text{ab}} = \frac{\text{ab}}{5} = \text{ab}.
\]

However, in some rare occurrences, ab is yeeted hard enough so that

\[
5^{\text{ab}} = \frac{\text{ab}}{5} = \text{ab}5 = \text{abs}.
\]

In particular, this gives

\[
5^{\text{ab}} = 5^{\text{ab}}(1) = \text{abs}(1) = 1.
\]

This corresponds precisely to the case where the yeeting was so hard that the numbers go full circle and become small again, and is very rare.

\[\square\]

3. Further research

In the abstract it was mentioned that [Lee18] observed that \( 5^{\text{ab}} \) collapses to 1 with probability greater than \( \varepsilon \) for some \( \varepsilon > 0 \). There are currently no known lower bounds for \( \varepsilon \) - this is a very active area of research [Att17, She16]. Yeet fibration cohomology with coefficients in \( \mathbb{Q}_{\text{ab}} \) is explored in [Ide19]. Some believe this will provide deep theoretical connections between ab and Yeetology, possibly finding a lower bound for \( \varepsilon \).

**References**

[Aba18] Mohamed Ababou. *Do you know that the digits have an end?* May 2018.