Knots.

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Abstract

A Knot is an embedding of a circle S^1 into three-dimensional Euclidian space R^3. This note tries to compile and formalize some properties I'm looking to develop on.
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1 Definitions and Proofs

1.1 First Definition

Definition 1.1. The following equation of two knots R^3, and M^3 combined equals a knot $\left|N^3\right|$.

$$R^3 + M^3 = \left|N^3\right|. \tag{1}$$

1.2 First Proof of Definition 1.1 using Number Theoric Axioms

Proof. Let the proof be:
(i) If $\left|N^3\right| = R^3 + M^3$, then $R^3 + M^3$ shall not yield a quotient other than 1 when dividing $R^3 + M^3$ by $\left|N^3\right|$.
(ii) By property, a knot is a unique mathematical object, thus $R^3 + M^3$ is a different mathematical object than R^3.
(iii) Thus by this construction of (ii), there is reason to impose the following statement: $\left|N^3\right| = R^3 + M^3$ when (ii), However there exist cases where knot may simply be empty.
(iv) Thus the proof concludes by a contradiction of $R^3 + M^3 = \left|N^3\right|$, thus not QED. ■

1.3 First Proof of Definition 1.1 using Set Theoric Axioms