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| **Author:** | Peirce, Charles Sanders |
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**Abstract / Description:**

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The nature of mathematics, pure and applied. In general, mathematics is concerned with the substance of hypotheses, drawing necessary conclusions from them; pure mathematics is concerned only with those hypotheses which contain nothing not relevant to the forms of deduction. The nature of quantity (real, rational, and imaginary). System of quaternions as an enlargement of the system of imaginary quantity. Possible grades of multitude. Spatial and temporal continuity. Common sense notions of continua, especially with regard to the flow of time. "Continuum" defined as "a whole composed of parts, with the parts of the whole comprising a series, such that, taking any multitude whatever, a collection of those parts can be discovered the multitude of which is greater than the given multitude." Lastly, reasons are given for thinking that continuity exists beyond the evidence afforded by our natural beliefs in the continuity of space and time.

**Keywords:** Mathematics, Quantity, Continuity, Infinity, Definition, Pure Mathematics, Applied Mathematics, Deductive Reasoning, Transitive Relation, Cyclical Relation, Negation, Singularity, Addition, Rational Quantity, Real Quantity, Endless Series, Direct Convergence, Limit, Imaginary Quantity, Quaternion, Quasi-continuum, Topics, Graphics, Metrics, Multitude, Number, Counting, Cardinal Numerals, Enumerable Collection, Denumerable Collection, Innumerable Collection, Georg Cantor, Abnumeral Collection, General, Individual, Time, Space, Reasoning, Moment, Presence, Continuum

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