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hypothesis

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In mathematics, a *hypothesis* is an unproven statement which is supported by all the available data and by many weaker results. An unproven mathematical statement is usually called a "conjecture", and while experimentation can sometimes produce millions of examples to support a conjecture, usually nothing short of a proof can convince experts in the field. But when a conjecture is supported not only but all the available data but also by numerous weaker results, it is upgraded in label to a hypothesis. The most famous conjecture in mathematics is the Riemann hypothesis, which despite many attempts at a proof, is supported by many related results. The convexity conjecture, on the other hand, is considered "incompatible" with the n-tuples conjecture and more results appear to support the latter, thus neither is upgraded to hypothesis.

References

[1] R. Crandall & C. Pomerance, *Prime Numbers: A Computational Perspective*, Springer, NY, 2001: 1.2.4