

Methods of Proof: A tour of some of my favorites

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Erdős's Birthday Lecture

Some Methods

Proof by Obviousness *The proof is so clear that it need not be mentioned.*

Proof by General Agreement *All in Favor?...*

Proof by Imagination *Well, We'll pretend its true.*

Proof by Convenience *It would be very nice if it were true, so ...*

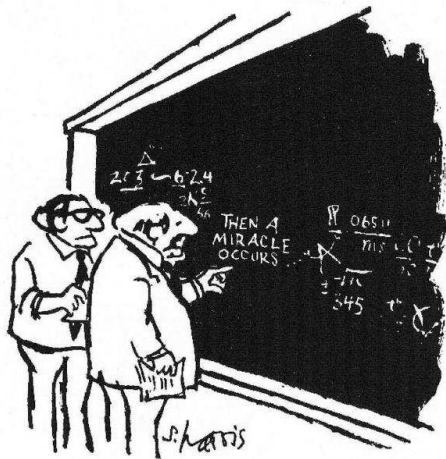
Proof by Necessity *It had better be true or the whole structure of mathematics would crumble to the ground.*

Proof by Plausibility *It sounds good so it must be true.*

Proof by Intimidation *Don't be stupid, of course it's true.*

Proof by Lack of Sufficient Time *Because of the time constraint, I'll leave the proof to you.*

For the visual learner



"I think you should be more explicit here in step two."

More Methods

Proof by Postponement *The proof for this is so long and arduous, so it is given in the appendix.*

Proof by Accident *Hey, what have we here?*

Proof by Insignificance *Who really cares anyway?"*

Proof by example *The author gives only the case $n = 2$ and suggests that it contains most of the ideas of the general proof.*

Proof by omission *The reader may easily supply the details or The other 253 cases are analogous*

Proof by deferral *We'll prove this later in the course.*

Proof by exhaustion *An issue or two of a journal devoted to your proof is useful*

Proof by eminent authority *Euler proved this in volume $\sqrt{-17}$ of his complete works.*