

## Re: Epistemology 201: The Science of Science

**Source:** <http://sci.tech-archive.net/Archive/sci.math/2005-01/7459.html>

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>>> *So, yes, there most certainly \*was\* a formal method to prove it,  
>>> consisting of reducing the problem to a finite number of cases.  
>>  
>> *The key to the proof being empirical is that a computer is used. So if the  
>> algorithm can be deductively proven to be correct, then I'll concede.*  
Otherwise  
>> *all that can be done is to test it on different computers with different  
>> programmes until we're satisfied, which is inductive.*  
>  
> *How are noncomputer proofs tested? By having lots of people test them  
> out. That process (of checking the proof) is just as inductive.**

Yep :)

>  
>> *My contention is not that the four colour problem is not formally provable.  
It  
>> may well be by someone with a lot of time on their hands. But unless the  
>> referees are prepared to spend the same amount of time, then they can only  
>> appeal to a computer proof.  
>>  
>> BTW, this is not to say that it is not admissible as a proof. I think it  
should  
>> be. It is just another argument for quasi-empirical mathematics.  
>  
> For reference, see:  
>  
> <http://www.math.gatech.edu/~thomas/FC/fourcolor.html>  
>  
> *The proof of 4CT is not quasi-empirical. No random sampling was made.  
> The cases are exhaustive. Yes, you need to prove that the algorithm  
> checking the cases is correct, and that the set of cases is  
> exhaustive. But that's not more empirical than any noncomputer proof.**

The sampling was in the algorithms, their implementations and the instances they were run.