

## Re: Is pure mathematics worth spending tax money for it?

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**From:** Peter Webb (wabbfamilyDIESPAMDIE\_at\_yahoo.com)

**Date:** 06/11/04

Date: Fri, 11 Jun 2004 23:02:19 +1000

"Nobuo Saito" <genkisaito@hotmail.com> wrote in message news:c1d437f.0406110359.4012cca2@posting.google.com...  
> Trevor Malcolm <trevmalc@yahoo.com> wrote in message news:<pan.2004.06.10.23.24.29.119037@yahoo.com>...  
>> On Thu, 10 Jun 2004 13:53:36 -0700, Nobuo Saito wrote:  
>>  
>>> I think every economically advanced nation spends money annually,  
>>> if not much, supporting researchers for pure mathematics  
>>> like number theory, algebraic geometry, differential topology,  
>>> etc. I heard arithmetic geometry on elliptic curves  
>>> has an application for cryptology. But I don't know many examples  
>>> which justify spending people's money for pure mathematics.  
>>  
>> That's probably because you actually don't know much pure math. Number  
>> theory and algebraic geometry have applications in cryptography among  
othe  
>> things, and they all (well, those three you mentioned) have applications  
>> in physics (especially differential topology). But seriously, if you  
have  
>> to ask whether or not pure math has any useful applications, you  
obviously  
>> don't know enough mathematics.  
>  
> While tax payers have right to ask their government if their tax money  
> is spent properly, they don't have to know much pure math.  
> I mentioned the applications of pure math in cryptography  
> (I meant it when I wrote the mis-spelled word "cryptology"), though.  
> Could you please tell us about the applications of those three pure math  
> in physics? What are they?

Pure mathematics is by definition the part of mathematics for which no applied use has been found. The bit that has been found useful is called "Applied Maths". There is typically some lag between a use being found and the branch of maths moving from Pure to Applied.

sci.math: Re: Is pure mathematics worth spending tax money for it?

You want example of the use of Pure Mathematics? How about the computer industry. This is totally dependent upon the mathematical theory of bases, Boolean logic, and computational theory which was all Pure Maths prior to 1940 or so. Or the use of prime numbers in e-commerce, as a more recent example.

What do you think the world's computer industry is "worth", in dollar terms? Not a bad payoff, eh? Still think mathematical research isn't a good investment of taxpayer dollars?