Re: Beal's conjecture

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- *From*: "Chip Eastham" <hardmath@xxxxxxxxx>
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stush@xxxxxxxxxxxxxx wrote:

> Roman B. Binder wrote:
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> > Also, it does not deserve the name 'Beal
> > Conjecture'. The extension
> > from the
> > Fermat conjecture to one of unequal exponents is one
> > that is obvious to
> > any number
> > theorist. And Mr. Beal isn't even a mathematician.
> >
> > At a number theory conference in Arcata California in
> > 1985, I was
> > present when John Tate
> > gave a terrific presentation of the (then brand new)
> > connection between
> > Taniyama−Shimura
> > and FLT that was given by Frey's work. Tate
> > mentioned that there were
> > a couple of obstacles,
> > including a conjecture of Serre, (proved by Ken
> > Ribet) that stood in
> > the way. At the end
> > of the talk a member of the audience asked the
> > question: Does the
> > result also apply to the
> > case of unequal exponents?
> >
> > Posing the question in such a casual manner shows
> > that the conjecture
> > is rather obvious.
> >
> > If anything, whoever posed the question is more
> > deserving to have the
> > conjecture named
> > after him. I wish I could remember who it was.

> > Hi,
> > Fermat used to express some kind of marvelous
> > demonstration to the case of powers bigger than 2.
> > Is it written in his statement, that such powers
> > should be equal ?
> > There is really something unexpected and common
> > for equal and not equal powers bigger than 2.
> > I used to come back to some trivial transformation
> > and just noticed once overlooked link to proof.
> > It looks there for very significant simplifications
> > of this conjecture and why: plotted parameter shows
> > to be just rational number...
> >
> > Ro−bin
> >
> > P.S. Please do not mix me so much with my previous
> > errors: my properties to square determinants
> > falls to factorization of X=mk but k=1...
> > if anybody used to read my previous posts...
>
> I looked at two sources and the conjecture can be read one of two ways:
>
> (1) a^x + b^y = c^z and x,y,z > 2 implies a,b, and c have a common
> factor d > 1
>
> (2) a^x + b^y = c^z and x,y,z > 2 implies (a,b), (a,c), and (b,c) are
> not all 1.
>
> Which is correct?

I believe these are equivalent. Suppose a,b have a common prime
factor. Then this prime divides c^z and hence must divide c also.

Similarly for any common factor of a,c or b,c...

regards, chip

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