

## Re: Surrogate factoring, out of the box

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[JSH]

> *Well I'll admit that I've been feeling a bit depressed the last couple  
> of days, as I had calculations showing at least 50% success with a  
> rational  $x$ , and then I checked thoroughly and found that my method gave  
> a LOT of rational  $x$ 's, and wasn't factoring with most of them.*

On sci.math, Rick Decker gave a detailed sketch of a proof that every non-zero rational  $x$  satisfies the equations (or at least the best he was able to decipher them from your paper). Nora Baron reached the same conclusion, but disagreed with algebraic details in Rick's sketch. I also reached the same conclusion, via a related approach, and illustrated it with a small, fully worked-out numeric example.

Of course it's possible that none of us were able to make sense of your intent (sorry, your paper is unclear on many points). But if we were, it's no surprise that most  $x$  wouldn't lead to a non-trivial factor, and especially not as the smallest prime factor of  $M$  increases.