Re: Rational and irrational numbers

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- *Date*: Mon, 29 Aug 2005 17:20:10 +0000 (UTC)

deepkdeb@xxxxxxxxx writes in article <1125252423.614978.59470@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx> dated 28 Aug 2005 11:07:03 −0700:
>Correction and modification:
>
>Given situations:
>
>sqrt(a) + sqrt(b) = u^k (1); sqrt(a) − sqrt(b) = v^k (2)
>uv is an integer, odd k > 5, both a and b are nonsquare integers > 0.
>
>Assertion: u and v must be of the form (3) and (4) where
>u = A*sqrt(g) + B*sqrt(h) (3); v = A*sqrt(g) − B*sqrt(h) (4)
>g, h are nonsquare integers and A, B are integers > 0.

Still incorrect. I am not going to provide a specific counterexample (although I believe (pi,1/pi) suggested by another poster still stands), just an argument based on cardinality.

The set of ordered pairs (x,y) s.t. xy=z has the cardinality of R. Remove the rational points and it's still |R|.

Your expression of x and y as functions of a finite number of (now 4) integers has the cardinality of N^4 which is equal to that of N. There must be some solutions missing.

−−Keith Lewis klewis {at} mitre.org
The above may not (yet) represent the opinions of my employer.
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