



A BMO2 question

NA3_RT14_2

Suppose x, y, z are positive integers satisfying the equation

$$\frac{1}{x} - \frac{1}{y} = \frac{1}{z},$$

and let h be the highest common factor of x, y, z .

Prove that $hxyz$ is a perfect square.

Prove also that $h(y - x)$ is a perfect square.

BMO2 1998 Q3.

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Relevance

NA3 What are highest common factors and why do they matter?