

On the divisibility of class numbers of imaginary quadratic fields $\mathbb{Q}(\sqrt{3^{2e} - 4q^n})$ and some Diophantine equations

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Abstract

In this talk, we mainly discuss the divisibility of class numbers of imaginary quadratic fields $\mathbb{Q}(\sqrt{3^{2e} - 4q^n})$, where q is a prime number, n is a positive integer and $e \geq 1$ are integers with $3^{2e} < 4q^n$. We also state a remark on the result of Le Maohua on the divisibility of class numbers of imaginary quadratic fields $\mathbb{Q}(\sqrt{1 - 4k^n})$. For these proofs, we use the results of Bugeaud-Shorey and Yuan on some Diophantine Equations. Concerning their results, we will discuss some Diophantine equations.