Mathematics > Number Theory

## A Cohen-Lenstra phenomenon for elliptic curves

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Given an elliptic curve $\$ \mathrm{E}$ \$ and a finite Abelian group $\$ \mathrm{G}$ \$, we consider the problem of counting the number of primes $\$ p \$$ for which the group of points modulo $\$ \mathrm{p} \$$ is isomorphic to $\$ \mathrm{G} \$$. Under a certain conjecture concerning the distribution of primes in short intervals, we obtain an asymptotic formula for this problem on average over a family of elliptic curves.

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