

Quadratic Residues

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The patterns I've noticed with Z_p is how the number of residues per prime is one more than half of the original number. For example, Z_7 has four quadratic residues. I found this somewhat interesting because I did not think the mod arithmetic would follow that consecutive pattern.

The patterns I noticed in regards to $-1 \in Z_p$ being a quadratic residue were that the same number of p's with that residue are the same as the numbers that don't have -1 as a residue. For example, if you input a number and you get three true's you will also get three false's.