

## PROBLEM N.7: QUADRATIC RESIDUE

ROSIE KEY

### 1. NUMBER OF QUADRATIC RESIDUES OF $\mathbb{Z}_p$

Let the natural number  $p$  be some prime number. The number of quadratic residues  $n$  for the set  $\mathbb{Z}_p$  can be determined with the following equation:

$$n = \frac{p+1}{2}.$$

### 2. DETERMINING IF -1 IS A QUADRATIC RESIDUE

If  $n$  is an odd number, then -1 will be a quadratic residue of  $p$ .