The $p$-adics.

- Defined the $p$-adic valuation and absolute value on $\mathbb{Q}$ and $\mathbb{Z}$.
- Defined $\mathbb{Q}_p$ and $\mathbb{Z}_p$ as an inverse limit, proved properties, and showed that they are the completions of $\mathbb{Q}$ and $\mathbb{Z}$.
- Stated and proved Hensel’s lemma, consequences about structure of $\mathbb{Z}_p^\times$, squares, etc.

Source: Poonen’s notes.

Quadratic forms.

- Generalities, classification over $\mathbb{F}_p$.
- Hilbert Symbol, classification over $\mathbb{Q}_p$.

Source: Serre, A course in arithmetic, parts of chapter 1 and 2.