

# Title

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Recall that we previously looked at the regular function fields: we took a function field in one variable and considered the class of function fields for which we could take any extension of the constant field that we wanted. As long as the ground field is perfect, being regular is equivalent to the constant subfield being  $k$  itself. However, we haven't done anything with them yet!

If you take an algebraic closure of the finite ground field  $\mathbb{F}_q$ , there is a unique extension of degree  $r$  for every  $r$ , so we call that  $\mathbb{F}_q^r$ .