## NT matters (wrapping things up)

Diophantus was the premier number theorist, Thousand years thereafter Fermat got the matter's gist;
Gauss, Lagrange and Euler mastered reciprocity, Kummer's ideal numbers brought him immortality...

$$
\begin{aligned}
& \text { Wake up from your slum-bers, } \\
& \text { al-ge-bra-ic-num-bers! }
\end{aligned}
$$

Monic polynomials that somehow minimise, non-uniqueness problems when you try to factorise, irreducibility and non-primality, UFD's and PID's. . . oh sheer insanity!

Fight all that en-cum-bers al-ge-bra-ic-num-bers!

An algebraic integer, contained in $\mathbb{Q}$ root $d$, is factored into primes if $\mathcal{O}$ sub $d$ 's a UFD.
The way in which they factor just depends on $d \bmod p$, and $p$ is ramified or split, or else inert, you see?

$$
\begin{aligned}
& \text { We've tamed-ay, ca-ram-bas!-- } \\
& \text { al-ge-bra-ic-num-bas! }
\end{aligned}
$$

H.G.

