

MATH 77: ALGEBRAIC NUMBER THEORY
HOMEWORK 8

- (1) Let K be an algebraic number field, \mathfrak{O} its ring of integers. Suppose the class number of K is 2. Show that if π is an irreducible such that $\langle \pi \rangle$ is not prime then $\langle \pi \rangle = \mathfrak{p}_1 \mathfrak{p}_2$, where $\mathfrak{p}_1, \mathfrak{p}_2$ are (not necessarily distinct) prime ideals.