

Appendix 4: Pictures of prime numbers for real non-UFD

The pictures show the quadratic character and a picture of **prime numbers** and **units** for some complex quadratic fields whose domain of integers is not a unique-factorization domain, namely of class numbers, h , as indicated

the fields of discriminant congruent 0 modulo 4:

$h = 2$: $Q(\sqrt{10})$, $Q(\sqrt{15})$, $Q(\sqrt{26})$, $Q(\sqrt{30})$, $Q(\sqrt{34})$, $Q(\sqrt{35})$, $Q(\sqrt{39})$, $h = 3$: $Q(\sqrt{79})$, $h = 4$: $Q(\sqrt{82})$

and the fields of discriminant congruent 1 modulo 4:

$h = 2$: $Q(\sqrt{65})$, $Q(\sqrt{85})$, $Q(\sqrt{105})$, $h = 4$: $Q(\sqrt{145})$, $h = 3$: $Q(\sqrt{229})$, $Q(\sqrt{257})$.

The pictures display the prime numbers, which generate the principal prime ideals, but not those irreducible numbers which are not prime. Moreover, the non-principal prime ideals are not displayed (see, however, appendices 6 and 8).





