**Primes in quadratic fields** 

Appendix 2:

## Pictures of prime numbers for real UFD

The pictures show the quadratic character and a picture of prime numbers and units for some real quadratic fields whose domain of integers is a unique-factorization domain, namely, for radicands < 32,

the fields of discriminant congruent 0 modulo 4:

 $Q(\sqrt{2}), Q(\sqrt{3}), Q(\sqrt{6}), Q(\sqrt{7}), Q(\sqrt{11}), Q(\sqrt{14}), Q(\sqrt{19}), (\sqrt{22}), Q(\sqrt{23}), Q(\sqrt{31})$ 

and the fields of discriminant congruent 1 modulo 4:

 $Q(\sqrt{5}), Q(\sqrt{13}), Q(\sqrt{17}), Q(\sqrt{21}), Q(\sqrt{29}).$ 

At the top, each picture mentions the field,  $\mathbb{Q}(\sqrt{r})$ , and displays its quadratic character (as far as space allows).

In the pictures, rational integers are placed on the x-axis and numbers of the form  $\sqrt{r}$  times rational integers on the y-axis.

When  $d \equiv 0$  modulo 4, we use a square grid, otherwise a staggered grid, where the grid points form roughly equilateral triangles.

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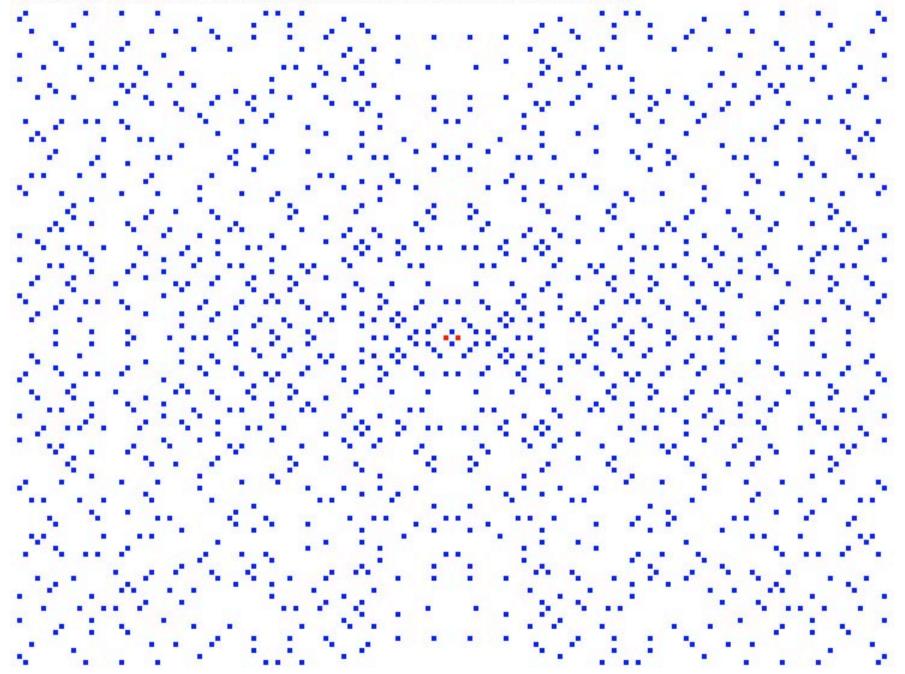
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## $Q(\sqrt{17})$ chi prime numbers units

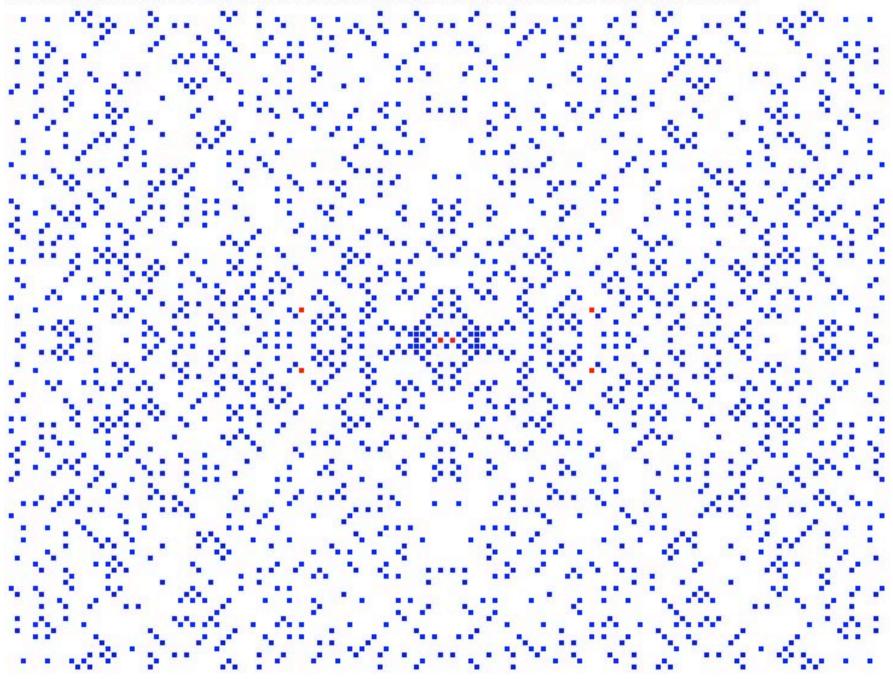
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 $Q(\sqrt{19})$  chi prime numbers units



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## $Q(\sqrt{29})$ chi prime numbers units

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