MAST 699/MAST 833/MATH 494 Algebraic Number Theory
FALL 2021

Assignment 2

Due Friday October 8

1., 2. 3. Marcus, Chapter 2, exercises 27-28-29

4., 5. 6. Marcus, Chapter 3, exercises 14-16-17

7. Let $\mathfrak{a} = (2, 1 + \sqrt{-3})$ in $\mathbb{Z}[\sqrt{-3}]$. Show that $\mathfrak{a} \neq (2)$ but $\mathfrak{a}^2 = (2)\mathfrak{a}$. Conclude that ideals do not factor uniquely into prime ideals in this ring. Why this does not contradict the theorems that we saw in class?