

HOMEWORK #10, DUE THURSDAY MAY 2ND

1. Herstein, Chapter 4, §5, 3, (a), (d).
2. Herstein, Chapter 4, §5, 10.
3. Find the greatest common divisor of $11 + 7i$ and $8 - i$ in the ring of Gaussian integers $\mathbb{Z}[i]$.
4. Herstein, Chapter 4, §5, 13.
5. Herstein, Chapter 4, §5, 14.
6. Herstein, Chapter 4, §5, 18.
7. **Challenge Problem:** Show that there is a ring R , and an element a of the ring which is a product of irreducibles, whilst at the same time the factorisation algorithm can fail, starting with a .
8. **Challenge Problem:** Herstein, Chapter 4, §5, 25.