

Math 113 Homework 13, due 5/2/2019.

1. Find $\gcd(f(x), g(x)) \in \mathbb{Z}_5[x]$ where $f(x) = x^4 + 3x^2 + 2x + 2$ and $g(x) = x^3 + x$. The “Single Indeterminate Illustration” on page 258 of the book (chapter on Gröbner bases) can be useful, though you do not have to read the rest of the chapter. (If you do read it, it contains very useful techniques for computations in algebraic geometry).

2. 26.12

3. 26.30

4. 27.5-27.6

5. 27.15-16

6. 27.24