Math 602 Homework #3, Spring 2016
Instructor: Ezra Miller

Solutions by: ...your name...

Collaborators: ...list those with whom you worked on this assignment...

Due: 7 March 2016

READING ASSIGNMENTS in [Eis95]

- by Monday 29 February: Chapter 6 through Corollary 6.3
- by Wednesday 2 March: §5.4, §6.5, §15.8, first paragraph of §5.1 and of §5.2
- by Friday 4 March: §1.9, §1.10 (snow-day makeup class, 13:00–14:15)
- by Monday 7 March: Chapters 8 and 9 (they're very short), §10.1
- by Wednesday 9 March: §10.2

EXERCISES

An exercise whose label is of the form C.n refers to the nth exericse in [Eis95, Chapter C].

4.9

4.11 (a)

    (b)

4.12 (a)

    (b)

4.22 (a)

    (b)

    (c)

    (d)

    (e)

4.24 $y^2 - x^3$:

    $y^2 - x^3 - x$:

6.1 (a)

    (b)

6.2 (2 points for each of ii–v)

6.8

6.9

6.10 (a)

    (b)

6.11 (a)

    (b)

    (c)

    (d)

    (e) Read Exercises 20.13 and 20.14. Interpreted geometrically, these are fundamental statements concerning vector bundles on varieties.

Additional exercises.

1. Explicitly describe all of the maximal ideals of $\mathbb{R}[x, y]$.

References

[Eis95] David Eisenbud, *Commutative algebra, with a view toward algebraic geometry*, Graduate Texts in Mathematics Vol. 150, Springer–Verlag, New York, 1995.