

# Math 100b Winter 2010 Homework 4

Due 2/5/09 in class, or by 5pm in HW box on 6th floor of AP&M

## Reading

All references will be to Beachy and Blair, 3rd edition.

Read sections 5.4 and 9.1.

## Extra Problems

These are generally easier or just extra problems you should look over to check your understanding of the material. They are not to be handed in.

Section 4.4: any unassigned exercises

## Assigned Problems

Write up neat solutions to these problems.

Section 4.2: 10, 11, 13(b, d), 14,

Section 4.3: 24

Section 4.4: 2(a) (use the rational root theorem), 4(b), 5(b), 8, 16 (remember there is a formula for a difference of two cubes.)

## Additional Problems

1. Show that  $x^4 + 4x^3 + 3x^2 + 5x + 7$  is irreducible over  $\mathbb{Q}$  by using a mod- $p$  test for some prime  $p$ .