Assignment 7
(Due Thursday, March 10, 2005)

Reading: §4.1

Problems: §3.1: #9, 12
       §3.2 #10, 16
       §3.3: #2(b,d,i,j), 4(c), 10

Here’s a hint, different from that in the text, for #10, Section 3.3. First assume either 2 or 3 is a square mod \( p \) and then use undetermined coefficients to factor \( f(x) \) into the product of quadratics in \( \mathbb{Z}_p[x] \). If neither 2 nor 3 is a square mod \( p \), then you can solve for \( x^2 \) using the quadratic formula (because of the Lemma), and once again write \( f(x) \) as the product of quadratics.