

Mathematics 216  
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Homework 29  
Due April 20, 2012

1. Factor  $x^4 + 1$  into irreducible factors in  $\mathbf{Q}[x]$ .
2. Factor  $x^4 + 1$  into irreducible factors in  $\mathbf{R}[x]$ .
3. Factor  $x^4 + 1$  into irreducible factors in  $\mathbf{C}[x]$ .
4. Factor  $x^4 + 1$  into irreducible factors in  $\mathbf{Z}/2\mathbf{Z}[x]$ .