



6. List five elements in the quotient ring  $\mathbb{Q}[x]/\langle p(x) \rangle$  (using the same  $p(x)$  from the previous page). Remember, these will all be cosets.
  
  
  
  
  
  
  
  
  
  
7. The element  $x^3 + \langle p(x) \rangle$  is an element of  $\mathbb{Q}[x]/\langle p(x) \rangle$ , but it can also be written as a “simpler” coset. How?
  
  
  
  
  
  
  
  
  
  
8. Describe  $\mathbb{Q}[x]/\langle p(x) \rangle$  as a set using set builder notation. In other words, this quotient ring is the set of all cosets of the form ...
  
  
  
  
  
  
  
  
  
  
9. Wait: if we want to show that  $E$  is a field, and  $E$  is basically the same as  $\mathbb{Q}[x]/\langle p(x) \rangle$ , then we could just show  $\mathbb{Q}[x]/\langle p(x) \rangle$  is a field. What would this mean? What do we need to verify?